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A DOCUMENTARY ON  
WEIGHT, DIET AND EXERCISE

Robert C. Drebelsis  
Lt. Col. USAF  
With Duty Station  
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WEIGHT, DIET AND EXERCISE

R. C. Drebelsis\*

The RAND Corporation, Santa Monica, California

PREFACE

A DOCUMENTARY ON  
WEIGHT, DIET AND EXERCISE

Correct weight, diet and exercise are essential to physical fitness and general good health. Recognizing this fact, this paper was compiled to bring together authentic scientific data on these subjects.

It answers such basic questions as:

- a. How much should you weigh?
- b. What should your daily caloric intake be

To reduce?  
To maintain your weight?

- c. What is a calorie?
- d. How are calories used in the body?
- e. What are the effects of overweight on mortality and life expectancy?
- f. What are the effects of reducing drugs?
- g. What should you expect from a diet?

The paper also contains a chart to determine your metabolism or the calories per day that you will require to lose weight and then to maintain a desired level.

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A complete nutritive calorie chart of foods arranged in alphabetical order is included. The caloric value of the foods listed is shown in convenient measurements of average portions or servings. Also for your convenience, there is a conversion table included which relates weights and measurements to standard food portions in daily use.

This document has been organized into two parts; Part I deals with weight and diet and Part II discusses exercise and physical fitness. Part II also includes a series of Back Flexion Exercises recommended for those individuals who suffer recurring back problems.

The information contained here has been compiled from documents published by the following agencies:

- a. Office of the Surgeon General, USAF.
- b. Build and Blood Pressure Studies, 1959, published by the Society of Actuaries, 208 South La Salle Street, Chicago 4, Illinois.
- c. Scripps Clinic and Research Council.
- d. National Academy of Sciences, National Research Foundation.
- e. U. S. Department of Agriculture, Home and Garden Bulletin #72.
- f. Statistical Bulletins published by the Metropolitan Life Insurance Company.
- g. U. S. Army Medical Research and Nutrition Laboratories, TM 8-501.
- h. U. S. Department of Agriculture, Leaflet No. 24, "Food For Fitness."

PART IWHAT SHOULD YOU WEIGH?

Findings of the National Research Council of the National Academy of Sciences show that most of us continue to gain weight periodically until about the age 60. Generally the average individual's weight at age 25 is his or her correct adult weight and the weight that should be maintained.

Based on the findings of the Build and Blood Pressure Study, 1959, prepared by the Society of Actuaries, and on anthropometric studies of body width, the Metropolitan Life Insurance Company prepared tables of desirable weights for men and women at ages 25 and over. The term "desirable" was applied to weight ranges, considering the broad ranges of weight according to height and frame and corresponding to the maximum prospects of longevity. (The determination of frame type; whether small, medium or large; is by bone structure, chest and hip width. These vary with height and no simple rule of thumb applies.)

**WHAT YOU SHOULD WEIGH**  
**(Weights listed below include ordinary street clothing)**

**WOMEN**

Height*	Small Frame	Medium Frame	Large Frame
56 inches	92-98	96-107	104-119
57 "	94-101	98-110	106-122
58 "	96-104	101-113	109-125
59 "	99-107	104-116	112-128
60 "	102-110	107-119	115-131
61 "	105-113	110-122	118-134
62 "	108-116	113-126	121-138
63 "	111-119	116-130	125-142
64 "	114-123	120-135	129-146
65 "	118-127	124-139	133-150
66 "	122-131	128-143	137-154
67 "	126-135	132-147	141-158
68 "	130-140	136-151	145-163
69 "	134-144	140-155	149-168
70 "	138-148	144-159	153-173

- \*  
 1. Height without shoes  
 2. For girls 18-25, subtract one pound for each year under 25  
 3. Deduct 4 to 6 pounds for clothing and shoes to determine approximate nude weight

WHAT YOU SHOULD WEIGH

(Weights listed below include ordinary street clothing)

## MEN

Height*	Small Frame	Medium Frame	Large Frame
60 inches	109-117	115-126	123-138
61 "	112-120	118-129	126-141
62 "	115-123	121-133	129-144
63 "	118-126	124-136	132-148
64 "	121-129	127-139	135-152
65 "	124-133	130-143	138-156
66 "	128-137	134-147	142-161
67 "	132-141	138-152	147-166
68 "	136-145	142-156	151-170
69 "	140-150	146-160	155-174
70 "	144-154	150-165	159-179
71 "	148-158	154-170	164-184
72 "	152-162	158-175	168-189
73 "	156-167	162-180	173-194
74 "	160-171	167-185	178-199
75 "	164-175	172-190	182-204
76 "	168-179	177-195	186-209

\*1. Height without shoes

2. Deduct 7 to 9 pounds for clothing (business suit) and shoes to determine approximate nude weight

**WHAT ARE THE EFFECTS OF OVERWEIGHT? UNDERWEIGHT?**

**Overweight**

In 1959, The Society of Actuaries conducted an extensive study on the effect of overweight on mortality at each age to life expectancy. The following is a general summary of the results of that study:

- o An excess of 10 percent over desirable weight results in an increase of 13 percent in mortality.
- o An excess of 20 percent over desirable weight results in an increase of 25 percent in mortality.
- o An excess of 30 percent over desirable weight results in an increase of 42 percent in mortality.

The following table is an interpolated extract from mortality tables giving life expectancy at various ages for the average individual and for persons who are 10, 20, and 30 percent above their desirable weight.

**LIFE EXPECTANCY**  
(years remaining)

Age	Average	10% Overweight	20% Overweight	30% Overweight
25	45.82	44.49	43.27	41.85
35	36.69	35.45	34.30	32.97
45	27.81	26.66	25.60	24.37
55	19.71	18.70	17.77	16.71
65	12.90	12.08	11.32	10.47

Being overweight, with the additional strain that this condition imposes upon the heart, is not the only reason for increased mortality. Overweight is often associated with problems such as hypertension and

other cardiovascular disorders that further increase mortality rates.

Underweight

Actuarial records indicate that persons who are up to 5 percent under the desirable weight for their height and build have fewer health problems and have a slightly increased life expectancy.

HOW MUCH DO YOU EAT?

It is recommended that "gimmick" diets be evaluated, for regardless of the title the basic factor determining your weight pattern is calories. If you are considering a weight reduction program, it would be wise to first determine your average daily caloric intake. To do this, it is suggested that you maintain an accurate record of what you eat daily for a period of 2 to 4 weeks. You must be honest with yourself: Count every nut you eat--and even the olives from your martinis. The results will probably be a shock to you. The following chart has been included to record your progress and to correlate weight changes with caloric intake or generally to determine your metabolism. Through proper use of this chart you can tailor your diet to suit your personal requirements.

**DAILY WEIGHT AND CALORIC CONSUMPTION RECORD**

**HOW MUCH SHOULD YOU EAT?**

**Daily Caloric Intake:** The following chart is a guide to the approximate daily caloric intake needed for the average normal healthy individual to maintain his desired weight. The amount of food required will, of course, vary with the individual and is largely dependent upon how active you are.

**APPROXIMATE DAILY CALORIE REQUIREMENTS TO MAINTAIN DESIRED WEIGHT****WOMEN**

<b>Desired Weight</b>	<b>Age 25</b>	<b>Age 45</b>	<b>Age 65</b>
88	1600	1450	1200
99	1750	1600	1300
110	1900	1700	1450
121	2000	1800	1550
128	2100	1900	1600
132	2150	1950	1650
143	2300	2050	1750
154	2400	2200	1850

**MEN**

<b>Desired Weight</b>	<b>Age 25</b>	<b>Age 45</b>	<b>Age 65</b>
110	2300	2050	1750
121	2450	2200	1850
132	2600	2350	1950
143	2750	2500	2100
154	2900	2600	2200
165	3050	2750	2300
176	3200	2900	2450
187	3350	3050	2550

If you do not find your desired weight in the above chart, compute your daily calorie requirements by using the formula below which applies to you.

**HOW MUCH SHOULD YOU EAT?**

**WOMEN**

**Age**

18-35	Multiply your desired weight by 12.3 and add 525
35-55	" " " " " 11.1 " " 475
55-75	" " " " " 9.3 " " 400

**MEN**

**Age**

18-35	Multiply your desired weight by 14.0 and add 725
35-55	" " " " " 12.7 " " 650
55-75	" " " " " 10.7 " " 550

**A Weight Reduction Diet.** If you are in good health and just want to "take off" 5 or 10 pounds, a moderate diet or a decrease in your daily caloric intake should remove these excess pounds and will probably improve your health. Here are some rules concerning a weight reduction diet:

- o Your daily caloric intake should be about 2/3 of that required to maintain your desired weight. (See charts above.) A sensible weight reduction diet should provide approximately 1800 calories per day for men, and 1200 calories per day for women.
- o Your weight reduction should not exceed more than 10 percent of your desirable weight and 2 pounds per week unless supervised by a physician.

- o While dieting, the foods you eat should be within the framework of your normal diet and consistent with your normal eating habits.
- o Avoid the one meal a day approach. This is called the "night eating syndrome," and clinical tests have proved it to be harmful and ineffective in most cases.
- o Your diet should include approximately 30 percent carbohydrates, or 500 calories (125 gr) for men and 360 calories (90 gr) for women. Anything less than this on a sustained basis could impair your health. A low carbohydrate diet should not be attempted unless supervised by a physician.

The average diet includes 300 gr (1200 calories) to 400 gr (1600 calories) of carbohydrates per day.

#### WHAT ARE CALORIES?

When you begin accounting for calories, there are a myriad of questions to be answered. The following will provide many answers.

What is a calorie? A measure of heat, heat potential or energy.

Definition:<sup>\*</sup> 1. The amount of heat required at one atmosphere of pressure to raise the temperature of one gram of water one degree centigrade. Called also "gram calorie" or "small calorie."

The amount of heat required at one atmosphere of pressure to raise the temperature of 1000 grams of water one degree centigrade, 1000 gram calories, or 3.968 BTU's, is referred to as "kilogram calories" or "large calorie."

2. A unit equivalent to the "large calorie" expressing heat-producing or energy-producing value in food when oxidized in the body.

#### Where are calories found?

The three basic elements in food which contain heat, energy or calories are: protein, fat and carbohydrate. Each gram of protein

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<sup>\*</sup>(Source: Webster's Seventh New Collegiate Dictionary.)

yields four (4) calories, each gram of fat, nine (9) calories, and each gram of carbohydrate four (4) calories.

#### CALORIES AND YOUR WEIGHT

In planning a diet program, whether to lose weight or to maintain your present level, it is important that you realize that approximately 3500 calories over your metabolic requirements are needed to produce one pound of body weight.

Generally the body may be compared to the engine of your automobile. Both burn fuel and both convert heat to energy. At idle, both are burning fuel at a minimum rate and when accelerated consume more fuel in direct relation to the speed and amount of work accomplished. If stopped the mechanical engine has no fuel requirements but the living human body can not be stopped; numerous body functions, those necessary to life such as heart beat, breathing, etc., continue when the body is at rest. Thus, the human body at rest can be compared to the mechanical engine at idle, it needs a minimum amount of fuel to sustain life, and approximately 50 percent of the calories you consume are used to sustain life. The minimum amount of energy necessary to sustain life or "idling calories" is referred to as basal metabolism or basal caloric requirements.

Individual metabolic rates differ considerably as a function of age, sex, body shape and size. An individual's caloric requirements increase with increased body weight. As you grow older your caloric needs will decrease. Body shape also influences basic caloric requirements in that a tall thin person of a given weight requires more basal calories than a short person of the same weight. The basal caloric

requirements for females is approximately 10 percent lower than for males. Also, metabolic rates can not be changed by a healthy individual, however, abnormalities such as overactive thyroid or pituitary glands or starvation may cause changes in the basal rate.

#### CALORIC NEEDS AND PHYSICAL ACTIVITY

Your personal activities, your job and your hobbies has a significant bearing on your caloric requirements. Just as in the case of the gasoline engine fuel requirements increase as speed and energy demands are increased. But, unlike a gasoline engine, your body will store energy as fat when you consume more calories than are needed to maintain your weight and activity and release it upon demand. Every movement of the body, no matter how slight, is work and uses calories. The greater the activity the greater is the demand for energy or calories. Therefore, your caloric needs over your basal requirements are directly related to your age, size, shape, sex and how active you are.

Exercise and activity are equally as important to health and desirable weight as your eating habits, therefore, it is important to know the rate at which the body consumes calories in planning your dietary requirements. As a guide to your personal needs a chart is included that establishes the approximate caloric requirements for various activities of men and women weighing 120, 160 and 200 pounds.

If you weigh more or less than the weights shown you may determine your own caloric demands from this chart through interpolation or extrapolation.

Caloric Adjustment for Climate

The caloric requirements for normal individuals as shown on the following chart are based on environmental temperatures between 50° to 80° F. Recent studies indicate that continuous exposure to environmental temperatures above 80° F or below 50° F will increase individual daily caloric requirements up to 100 calories for each 2° F change.

## ENERGY EXPENDED IN CALORIES PER MINUTE

15

ACTIVITY	120 lbs		160 lbs		200 lbs		DESCRIPTION OF ACTIVITY
	M	F	M	F	M	F	
BMR and Sleep	.88	.79	1.09	1.00	1.29	1.16	Basal metabolic rate & sleep.
Sitting, Normal	1.04	.94	1.29	1.16	1.53	1.38	Sitting with minimum activity except talking.
Sitting, Reading	1.04	.94	1.29	1.16	1.53	1.38	Minimum activity except reading or writing.
Sitting, Eating	1.21	1.09	1.49	1.34	1.77	1.59	All activity involved in eating.
Sitting, Playing Cards	1.24	1.12	1.53	1.38	1.82	1.64	Normal activity in playing cards.
Bed Rest	1.02	.92	1.26	1.13	1.50	1.35	Lying, reading/talking, minimum movement.
Standing	1.21	1.09	1.50	1.35	1.77	1.59	Minimum movement.
Standing, Light Activity	2.10	1.89	2.60	2.34	3.09	2.78	Washing dishes, dusting, etc.
Personal Toilet	1.64	1.48	2.02	1.82	2.40	2.16	Washing hands, face, shower, brushing teeth.
Shower/Bath	2.75	2.48	3.40	3.06	4.04	2.64	Includes bathing & drying.
Dressing	2.75	2.48	3.40	3.06	4.04	2.64	Dressing/undressing.
Making Beds	3.95	3.56	4.88	4.39	5.81	5.23	Movements involved in making beds.
Shining Shoes	2.55	2.29	3.20	2.88	3.80	3.42	Standing with one foot raised.
Sweeping	3.17	2.85	3.91	3.52	4.65	4.18	Using either straight or push broom.
Mopping	3.94	3.54	4.86	4.37	5.78	5.20	Using wet or damp mop.
Walking, Indoors	2.51	2.26	3.11	2.80	3.70	3.33	Slow normal gait in a building, occasional short steps.
Test: 2 MPH	2.60	2.34	3.20	2.88	3.80	3.42	Test conducted to show increased energy expenditure with increased speed; normal step & constant gait.
3 MPH	3.60	3.24	4.40	3.96	5.30	4.77	
4 MPH	4.70	4.23	5.80	5.22	7.00	6.30	
Walking, Outdoors	4.60	4.14	5.68	5.01	6.76	6.08	Normal brisk pace on a paved surface.
Climbing Stairs	15.00	13.50	18.58	16.72	22.11	19.90	Normal gait one step at a time.
Walking Down Stairs	5.80	4.22	7.14	6.43	8.50	7.65	Normal one step at a time descent.

ACTIVITY	120 lbs		160 lbs		200 lbs		DESCRIPTION OF ACTIVITY
	M	F	M	F	M	F	
Hiking (No Pack)	5.23	4.71	6.53	5.88	7.77	6.99	Normal hike over natural terrain up and down hill, etc.
Cross-Country Hike	7.79	7.01	9.62	8.66	11.44	10.30	Cross-country over 7 mi course alternating trotting & walking over natural terrain.
Trotting (Double Time)	15.75	14.17	19.43	17.49	23.13	20.82	180 steps per minute or trot.
Step Test	17.20	15.48	21.55	19.40	25.63	23.07	3-minute Harvard Step Test using a 20" bench or step.
V-EK/X-EK	4.82	4.36	5.95	5.30	7.08	6.37	Air Force Physical Fitness Tests, 11-minutes duration (age 25).
Calisthenics	4.38	3.94	5.41	4.37	6.44	5.80	10-minute daily exercise: squats, push-ups, arm exercises, etc.
USAF Evasion Test	9.16	8.24	11.31	10.18	13.46	12.11	Evasion-infiltration course, running, crawling, squat run, etc.
Football	8.15	7.33	10.06	9.05	11.97	10.77	Punting, passing, catching passes; some running practice.
Basketball	6.96	6.26	8.59	7.73	10.22	9.20	Half-court practice; moderate activity.
Pingpong	3.86	3.47	4.77	4.29	5.86	5.27	Two-man game.
Bowling	6.19	5.57	7.64	6.88	9.09	8.18	Average game.
Baseball	6.00	5.40	7.26	6.53	8.49	7.64	Fielding & batting; moderate activity.
Swimming	9.21	8.29	11.49	9.99	13.67	12.30	Normal activity in pool.
Washing Clothes	2.45	2.20	3.03	2.73	3.60	3.24	Wash & rinse by hand.
Kneeling	.84	.76	1.42	1.28	1.62	1.46	Little or no movement while kneeling.
Squatting	1.61	1.45	1.99	1.79	2.37	2.13	Resting squat position; little or no movement.
Boxing/Sparring	7.72	6.95	9.53	8.58	11.42	10.18	Moderate activity for exercise.
Tennis	5.57	5.01	6.88	5.18	8.24	7.42	Normal 2-man game; moderate activity.
Golf	4.39	3.95	5.69	5.12	6.49	5.84	Normal speed; carrying own clubs.

ACTIVITY	120 lbs			160 lbs			200 lbs			DESCRIPTION OF ACTIVITY
	M.	F.	M.	F.	M.	F.	M.	F.	M.	
Dancing	3.18	2.86	3.92	3.53	4.74	4.27	Waltz, normal tempo.			
Rowing	6.37	5.73	7.87	7.08	9.43	8.49	Moderate activity.			
Sailing	2.07	1.86	2.55	2.29	3.06	2.75	Normal activity involved in sailing.			
Riding a Horse	2.39	2.15	2.94	2.65	3.88	3.49	Trot or singlefoot:			
Pool-Snooker	2.39	2.15	2.94	2.65	3.88	3.49	Normal activity required.			
Squash/Handball	7.72	6.95	9.53	8.58	11.42	10.28	Moderate activity.			
Badminton	3.02	2.72	3.73	3.36	4.47	4.02	Moderate activity.			

WHAT ABOUT REDUCING PILLS?

Hunger suppressing drugs should only be used when prescribed by your doctor. This is what they do:

1. Mask or suppress hunger
2. Speed up metabolism, heart beat, etc.

Some doctors maintain that what would be gained in life expectancy by weight reduction will be lost by the detrimental effect of these drugs on the heart.

The drug affects people differently. Generally they will take the edge from your appetite and pep you up. Yes, they are a pep pill; their effects last about 12 hours. Consider this when you use them--they will keep you awake! In effect, they are a crutch and provide only temporary assistance. The most effective diet is based on will power and constraint.

HOW DO YOU LOSE WEIGHT?

Fat is lost in inverse order to the way it was accumulated. The last roll or bulge you developed will be the first to go. But don't expect miracles; if you chest has slipped, diet will remove the paunch, but it won't restore muscle--that takes exercise. (See Part II.)

In a weight reduction program, what should you expect?

Individual psychophysical effects of dieting cannot be expressed, but here are some general comments:

- o The first week may be miserable. You will be hungry, but this will taper off as your stomach becomes accustomed to less food.
- o You may feel that you are a martyr to the cause.
- o Your body processes will react to having less to do by slowing down. You may suffer temporary constipation but nature will correct this problem and your body will adjust and regulate.

- o You may not be rewarded by an immediate weight loss and your weight loss will be closely allied to your body elimination processes. You will probably lose weight in steps.
- o Your initial loss will be followed by a few days or perhaps a week when your weight remains constant. You will again notice a decrease and then a stable or leveling off period, etc. Don't change your diet habits; keep up the good work.

TABLE OF WEIGHTS AND MEASURES

The following table relates weights and measures to standard food portions used daily.

EQUIVALENT/CONVERSION TABLES  
Avoirdupois Weights and Measures in General Use

Unit	Gram (gr.)	Teaspoon (tsp.)	Tablespoon (tblsp.)	Ounce (oz.)	Cup
Gram	1.0	.2118	.0706	.0353	.00442
Teaspoon	4.73	1.0	.333(1/3)	.166(1/6)	.021(1/48)
Tablespoon	14.18	3.0	1.0	.50(1/2)	.0625(1/16)
Ounce	28.35	6.0	2.0	1.0	.125(1/8)
Cup	226.80	48.0	16.0	8.0	1.0

(100 grams = approximately 3 1/3 oz.)

The average contents of standard cans found on your grocer's shelves are:

Size	Contents (Avg.)		Ounces
8 oz	1	Cup	8
Picnic	1 1/2	"	10
#300	1 3/4	"	14
#1 Tall	2	"	16
#303	2	"	16
#2	2 1/2	"	20
#2 1/2	3 1/2	"	28
#10	12-13	"	96-100

REVIEW

There are few conditions in your physical existence over which you have control; certainly not your age, height, build or coloring. But weight and physical fitness are two conditions that the average individual can effectively control.

You will gain weight when you consume more calories than you need to sustain your daily activities. The excess calories you eat are stored in the body as fat. You lose weight when you expend more energy than is contained in the food you consume and then nature draws from the existing "fat" resources for the excess energy you need.

There are two things that you can do to lose weight:

1. Reduce your caloric intake and force the body to use the reserve energy it has stored up in fat.
2. Increase your physical activity, thereby increasing your metabolic rate.

A balanced weight reduction program should include both controlled caloric intake and a regular program of exercise.

Much of your weight is made up of body fluids which can vary as much as 10 pounds in the span of a few hours, depending upon the severity of your activity. Normally, your weight will fluctuate 2 to 3 pounds daily. You are usually at the minimum or low before breakfast and at the maximum or high at the end of the day, just prior to retiring.

When you begin a weight reduction program, your weight loss may be quite dramatic at first. This initial loss is usually excess fluids and does not represent a real weight loss. Remember that 1 pound of fat represents 3500 excess calories. A Diet which amounts to 1000

calories per day less than the amount required to sustain your desired weight will result in a loss of about 2 pounds per week.

Don't diet just to prove to yourself and other that you can. Recognizing that an overweight condition causes an additional strain on your heart, you should also understand that allowing your weight to fluctuate can be even more detrimental to your health. As an example, if after an appreciable loss of weight resulting from a diet you then relax and regain those excess pounds, your heart must rebuild the network of veins and capularies to supply blood to this newly acquired reserve and you may have set the date for an appointment with your future heart specialist. If you achieve your desired weight, maintain it.

Finally, behind every diet there is an overriding and motivating reason. Whether that reason is medical or aesthetic, dieting can become a distasteful bore. To help overcome this, develop a system to maintain your interest. For example, follow and chart your daily weight changes; learn food portion calorie values; and evaluate all you eat and record your daily calorie consumption. Devise a system and stick with it until you have reached your desired weight. Then, develop a new eating pattern and live with it. You'll look better and feel better.

NUTRITIVE AND CALORIC  
VALUE OF FOODS

Calorie values for the food items listed are based on the serving or portions indicated.

Source: United States Department of Agriculture bulletins on Nutritive and Caloric Values of foods.

Scripps Clinic and Research Foundation.

Various other sources.

Note: Weight/servings of all meat products listed on the following calorie charts are those of raw or prepared portions. Caloric values shown are for that weight or serving after it has been cooked or ready to eat.

The reference "lean" also indicates that the meat has been trimmed of excess fat.

- A -

<u>ITEM</u>	<u>SERVING</u>	<u>CALORIES</u>
Abalone, broiled	4 oz	133
Abalone, canned	2/3 cup	103
Alcoholic beverages (SEE SEPARATE LISTINGS AT END OF A'S)		
Ambrosia	1/2 cup	80
Anchovies	3 sm fillets	20
Anchovies, paste	1 tsp	14
Apples:		
Raw	1 sm	58
Raw	1 med	78
Raw	1 lg	117
Raw, sliced	1 cup	83
Baked	1 lg	158
Dehydrated	1 lb	1600
Dried	1 cup	315
Dried, cooked, unsweetened	1 cup	200
Dried, cooked, sweetened	1 cup	294
Apples & Apricots, canned, strained	1/2 cup	70
Applesauce, canned, unsweetened	1/2 cup	25
Applesauce, canned, sweetened	1/2 cup	47
Applesauce, canned, strained	1/4 cup	34
Apricots:		
Fresh	3 med	54
Candied	1 med	100
Canned, w/syrup	4 oz	100
Canned	4 halves w/2 Tb syrup	100
Canned, water packed	1/2 cup	40
Canned, low calorie	4 halves	40
Canned, strained	1/4 cup	34
Dried	5 halves	49
Dried, cooked, unsweetened	1/2 cup (6 halves)	60
Dried, cooked, sweetened	1/2 cup (6 halves)	100
Frozen	1/2 cup	93

Arrowroot flour	1 Tb	29
Artichoke hearts, canned	5	25
Artichoke, fresh	1	51
Artichoke, Jerusalem	4 sm	70
Asparagus, cooked	1 lb (cut)	92
Asparagus, cut spears	1/2 cup	20
Asparagus, cut spears, canned	1/2 cup	20
Asparagus, canned	6 spears	20
Asparagus, frozen	6 spears	20
Avocado (California)	1/2 med	185
Avocado (California)	1/2 cup, cubes	130
Avocado (Florida)	1/2 med	160
Avocado (Florida)	1/2 cup, cubes	100

- B -

Bacon, very crisp	4 slices thin	180
Bacon, limp	4 slices thin	240
Bacon, Canadian	4 oz, cut <sup>1/4</sup> slices)	260
Bagel	1 med	125
Bamboo shoots	1/2 cup	34
Banana fritter	1	180
Banana		
Fresh	1 lg	119
Fresh	1 med	85
Fresh, sliced	4 oz	70
Fried, medium	1 oz	112
Barley, dry	1 cup	708
Bass, baked or broiled	4 oz	180
Bass, canned	4 oz	185
Bean sprouts, mung	1/4 cup	15
Beans:		
Baked, canned, pork & molasses	1/4 cup	80
Baked, canned, pork & tomato sauce	1/4 cup	74
Green, cooked	1/4 cup	6
Green, canned (w/liquid)	1/4 cup	11

**Beans:**

Green, canned, strained	2 oz	12
Kidney, canned	1/4 cup	60
Lima, cooked	1/4 cup	40
Lima, canned	1/4 cup	40
Dried lima, cooked	1/4 cup	65
Lima, frozen	3 Tb	110
Dry navy, cooked	1/4 cup	160
Dry pinto, cooked	1/4 cup	175
Dry red Mexican, cooked	1/4 cup	175
Dry soy, cooked	1/4 cup	175
Wax, canned	1/4 cup	7
Dry white marrow, cooked	1/4 cup	160

**Beef:**

Broiled, lean	3 oz	220
Broiled, fat	3 oz	330
Braised, pot roast	3 oz	340
Braised, pot roast, lean	3 oz	165
Brisket	1 oz slice	110
Chuck, broiled	3 oz	270
Chuck, ground	3 oz	240
Corned, boiled	1 oz slice	100
Corned, canned, lean	1 oz slice	55
Corned, canned, w/fat	1 oz slice	60
Dried chipped	2 oz	115
Dried chipped, creamed	1/4 cup	105
Flank	3 oz	270
Hamburger, regular, broiled	4 oz	320
Hamburger, lean, broiled	4 oz	240
Plate, braised	1 oz slice	85
Roast, rib, lean only	3 oz	240
Roast, w/fat	3 oz	390
Roast, lean,	3 oz	110
Round, lean, broiled	3 oz	197
Round, ground, lean	4 oz	200
Rump	3 oz	320

**Beef:**

Rump, pot roast, lean	3 oz	160
Rump, pot roast, lean and fat	3 oz	245
Short ribs, braised	4 oz	485
<b>Steak:</b>		
Club	4 oz	335
Filet mignon	4 oz	330
Flank	4 oz	280
Porterhouse	4 oz	290
Rib	4 oz	315
Round, lean, broiled	4 oz	220
Round, lean and fat	4 oz	440
Sirloin, lean, broiled	4 oz	250
T-bone	4 oz	295
Tenderloin	4 oz	270
Stew, chuck	4 oz	405
Stew, round	4 oz	310
Tongue, pailed	1 oz slice	70
Suet	1 oz	160
Suet, rendered	1 Tb	118

**Beets**

Raw	1/4 cup	15
Cooked	1/4 cup	16
Canned	1/4 cup	16
Canned, strained	2 oz	20
Pickled	1/4 cup	15
Biscuits	1 med	129
Biscuits	1 sm	85

**Blackberries:**

Fresh	1/4 cup	20
Canned w/syrup	1/4 cup	55
Canned, water packed	1/4 cup	25
Canned, low calorie	1/4 cup	15
Blintzes	1 sm	152

**Blueberries:**

Fresh	1/4 cup	85
Canned w/syrup	1/4 cup	61

**Blueberries:**

Canned, water packed	1/4 cup	23
Canned, low calorie	1/4 cup	22
Frozen, unsweetened	3 oz	52
Bluefish, baked	4 oz	176
Bluefish, fried	4 oz	232
Bologna (1/8" slice)	1 oz	81
Bouillon, beef or chicken	1 cube	2
Boysenberries, canned, low calorie	1/4 cup	18
Brains, all kinds	3 oz	106
Bread crumbs, dry	1 cup	339

**Breads:**

Banana, slice 1/2x4x4	1	134
Boston brown, round slice 1/2x4	1	70
Brown, slice 1/2x4x4	1	75
Brown raisin, slice 1/2x4x4	1	148
Brown nut, slice 1/2x4x4	1	100
Cinnamon, slice 1/2x4x4	1	130
Corn, slice 1/2x4x4	1	130
Cracked Wheat, slice 1/2x4x4	1	60
Cracked Wheat	1 lb	1190
Date nut, slice 1/2x4x4	1	105
French, 1/2" slice (average)	1	54
French	1 lb	1315
Gluten, low calorie, 1/2x4x4	1	35
Graham, slice 1/2x4x4	1	55
Graham	1 lb	1105
Italian 1/2 slice (average)	1	60
Italian	1 lb	1250
Protein, slice 1/2x4x4	1	60
Pumpernickel, slice 1/2x4x4	1	75
Pumpernickel	1 lb	1115
Raisin, slice 1/2x4x4	1	80
Raisin	1 lb	1190
Roman meal, slice 1/2x4x4	1	69

Rye, light, slice (average)	1	55
Rye, light	1 lb	1100
Rye, dark, slice (average)	1	71
Rye, dark	1 lb	1250
Rye, party slice (average)	1	37
Short	1 square	80
Saya, slice 1/2x4x4	1	65
Spoon, 1 serving	3 oz	250
Vienna, slice (average)	1	54
Vienna	1 lb	1315
White, slice 1/2x4x4	1	60
White	1 lb	1225
Whole Wheat, slice 1/2x4x4	1	55
Whole Wheat	1 lb	1105
Broccoli, 1 stalk	1/2 cup	25
Brussel Sprouts, cooked	1/2 cup	30
Buffalo Steak/Roast, cooked	4 oz	275
Buns:		
Cinnamon (average)	1	158
Cinnamon Raisin (average)	1	183
Hot Cross	1	120
Pecan	1	185
Butter, 2 sticks, 1/2 lb 227 grams:	1 cup	1605
1/8 stick,1/2 oz 14 grams:	1 Tb	100
1/16 stick,1/4 oz 7 grams:	1 pat	50
Butterfish, baked/broiled	4 oz	235
Butterfish, fried	4 oz	350
- C -		
Cabbage, shredded	1/2 cup	12
Cabbage, boiled	1/2 cup	20
Cabbage, Chinese, shredded	1/2 cup	7
Cabbage, Chinese, boiled	1/2 cup	14
Cakes:		
Almond Coffee, slice 2x3x1	1	175
Anglefood, 2" wedge	1	110
Apple Crumb, slice 2x3x1	1	170
Butter, plain, square 2x2x1	1	130

		320
Butter, iced, square 2x2x1	1	210
Carmel, iced, square 2x2x1	1	275
Cheese cake (average piece)	1	285
Cheese cake, pineapple (average)	1	150
Chocolate, plain, 2" wedge	1	420
Chocolate, iced, 2" wedge	1	356
Chocolate, layer, 2" wedge	1	258
Coconut, iced, 2x2x1	1	150
Coffee, plain, 2x2x1	1	250
Coffee, iced w/nuts, 2x2x1	1	131
Cup, plain (average)	1	161
Cup, iced (average)	1	307
Date torte (average)	1	105
Fruit, 2" wedge	1	180
Gingerbread, 2x2x1	1	180
Gold, 2" wedge	1	235
Icebox (average)	1	150
Jelly roll, 1" slice	1	345
Layer, 2 tier, 2" wedge	1	445
Layer, 3 tier, 2" wedge	1	180
Marble, 2" wedge	1	450
Pineapple upside-down, 2" wedge	1	130
Pound, 1/2" slice	1	
Shortcake (SEE SHORTCAKE)	1	117
Sponge, 2" wedge	1	180
Sunshine, 2" wedge	1	200
Washington Cream, 2" wedge	1	
Candies:		218
Almond Joy, 10¢ bar	1	50
Bonbon	1	103
Brown Sugar fudge, 1x1x1	1	116
Butterscotch	1 oz	118
Caramel	1 oz	60
Caramel chocolate nut	1 oz	140
Chocolate, bitter		

Chocolate, bitter	1 cup grated	660
Chocolate, milk	1 oz	155
Chocolate, milk w/almonds	1 oz	170
Chocolate, semisweet	1 oz	145
Chocolate, sweet	1 oz	133
Chocolate bar	2 oz	270
Chocolate bar w/nuts	1 oz	170
Chocolate cherry	1	125
Chocolate cream	1 oz	110
Chocolate fudge	1 oz	118
Chocolate Kiss (Hershey)	1	21
Chocolate mint	1 oz	125
Chocolate mint patty	1	35
Clark Bar, 5¢	1	133
Coconut cream	1 oz	100
Cream mint patty	1	25
Date cream	1 oz	115
Divinity	1 oz	100
Fondant	1 patty	39
Fruit drops	3 (approximately 1 oz)	100
Fudge	1 oz	118
Fudge w/nuts	1 oz	122
Glazed fruit	1 oz	95
Gum drops	1 lg (approximately 1 oz)	33
Hershey milk chocolate, 5¢ bar	1	115
Hershey milk chocolate almond bar, 5¢	1	138
Jelly beans	5 (approximately 1 oz)	33
Lemon drops	1	15
Life Savers, fruit	1 roll	110
Life Savers, mint	1 roll	90
Mars Bar	1 oz	108
Milky Way	1 oz	115
Three Musketeers	1 oz	108
Marshmallow	4 (approximately 1 oz)	100
Chocolate Marshmallow	3 (approximately 1 oz)	135

After dinner mints	5	50
Molasses kisses	1	25
Mounds bar	1 piece	120
Nestles' Milk Chocolate 5¢ bar	1	115
Nestles' Milk Chocolate, w/almonds 5¢ bar	1	105
Nestles' Milk Chocolate, crunch 5¢ bar	1	107
Nougat	1 oz	115
Nougat w/nuts	1 oz	125
Oh Henry bar	1	142
Peanut bar	1 oz	130
Peanut brittle	1 oz	130
Peanut-Coconut brittle	1 oz	130
Praline	1 oz	150
Sourballs	1	20
Taffy	1 oz	50
Toffee, Coffee	1 oz	100
Toffee, English	1 oz	125
Tootsie Roll, 5¢ bar	1	110
Cantaloupe	1/2 melon	37
Cantaloupe	1 cup diced	30
Capers	1 Tb	8
Carrots:		
Raw	1	20
Raw, grated	1 cup	45
Cooked	1 cup diced	45
Canned	1 cup diced	45
Canned, strained	1 oz	5
Frozen	1/2 cup	30
Casaba Melon	1/6 melon wedge	52
Cassava	1/2 cup	140
Catsup	1 Tb	15
Cauliflower	1 cup	25
Caviar	1 tsp	25

Celeriac	1 average root	10
Celery	1 lg stalk	5
Celery, diced	1 cup	20
Celery, cooked	1 cup	25
<b>Cereals:</b>		
All Bran	1/2 cup	95
Bran Flakes	1 cup	117
Cheerios	1 cup	100
Corn, Puffed	1 oz	110
Corn flakes	1 cup	96
Corn grits	1 cup	120
Cream of Wheat, Cooked	1 cup	120
Farina, Cooked	1 cup	100
Grape Nuts	1/2 cup	220
Grape Nut Flakes	1 cup	150
Hominy	1 cup	120
Infant, Dry, Precooked	1 oz	103
Kellogg's Concentrate	1/2 cup	40
Kellogg's Special K	1 cup	70
Kix	1 cup	100
Krispies	1 cup	136
Krumbles	1 cup	140
Maltex, Cooked	1 cup	150
Maypo, Cooked	1 cup	150
Oatmeal, Cooked	1 cup	150
Pablum	1 Tb	1½
Pep	1 cup	105
Post Toasties	1 cup	100
Raisin Bran	1 cup	150
Ralston, Cooked	1 cup	125
Rice Chex	1 cup	100
Rice, Puffed	1 cup	55
Rice Flakes	1 cup	118
Rice Krispies	1 cup	105

## Cereals:

Shredded Wheat, 1 oz biscuit	1	100
Sugar Krisp	1 cup	150
Wheat Chex	1 cup	190
Wheat, puffed	1 cup	43
Wheat flakes	1 cup	125
Wheatina, cooked	1 cup	150
Wheaties	1 cup	106
Cervelat	1 slice	125
Chard cooked	1 cup	45

## Cheese:

American	1 oz	115
American, grated	1 Tb	30
Bleu	1 oz	104
Blue, domestic	1 oz	104
Brie	1 oz	100
Camembert	1 oz	85
Chateau	1 oz	100
Cheddar	1 oz	115
Cheddar, grated	1 cup	446
Cheddar, processed	1 oz	105
Cottage, diet	1/2 cup	97
Cottage	1 oz	25
Cottage, creamed	1/2 cup	120
Cream	1 oz	105
Edam	1 oz	87
Feta	1 oz	88
Gorgonzola	1 oz	100
Gruyere	1 oz	115
Liederkranz	1 oz	90
Limburger	1 oz	100
Mysost	1 oz	70
Neufchatel	1 oz	100
Pabst-ett	1 oz	90
Parmesan	1 oz	112

**Cheese:**

Parmesan, grated	1 Tb	30
Pimiento	1 oz	100
Pot	1 oz	20
Provolone	1 oz	95
Roquefort	1 oz	105
Swiss	1 oz	105
Velveeta	1 oz	90
Cheese Souffle	1/2 cup	180

**Cheese Spread:**

Bacon	1 oz	95
Old English	1 oz	100
Olive Pimiento	1 oz	65
Pimiento	1 oz	70
Pineapple	1 oz	70
Relish	1 oz	70
Roka Bleu	1 oz	80

**Cherries:**

Fresh	1 cup	65
Fresh, pitted	1 cup	95
Candied	1 med	15
Canned, unsweetened	1 cup	120
Canned Bing, low calorie	1 cup	75
Canned, Royal Ann, low calorie	1 cup	88
Maraschino	1 average	20

**Chicken:**

Broiled	4 oz	150
Canned, boned	4 oz	225
1/2 average chicken, fried	6 oz	260
Fried, average piece	2.1 oz	90
Roast	2 slices	160
Stewed	1/2 chicken	210
Chicken a la king	1/2 cup	230
Chicken paprikash	small serving	445
Chicken pie	average serving	460

Chick-peas, dry	1/2 cup	377
Chili Con Carne, w/o beans canned	1 cup	510
Chili Con Carne, w/beans canned	1 cup	335
Chili powder	1 Tb	50
Chives, chopped	1 Tb	3
Chocolate - Milk beverage	1 cup	240
Chop Suey	1 cup	400
Chow Mein	1 cup	300
Chutney, apple	3 oz	240
Chutney, tomato	3 oz	180
Cider, sweet	1 cup	94
Clam cocktail, w/6 clams, 1 Tb sauce	1 serving	85
Clam juice	4 oz	45
Clams:		
Raw	4 oz	92
Cherry stone	6 clams	65
Littleneck	6 clams	55
Steamers	6 clams	50
Canned, w/liquid	3 oz	44
Fried	10 clams	250
Steamed, w/Tb butter	6 clams	150
Stuffed, baked	2 clams	185
Cocoa:		
w/whole milk	1 cup	235
w/skim milk	1 cup	160
powder	1 cup	329
powder	1 Tb	21
Cocomalt, w/whole milk	1 cup	280
Cocoanut:		
Fresh, 2" square	1 square	161
Fresh, shredded	1 cup	330
Dried, shredded, sweetened	1 cup	344
Codfish:		
Uncooked	4 oz	84
Cooked	3-1/2 oz	98

**Codfish:**

Creamed	1/2 cup	150
Dried	1 oz	106
Balls	1	100

**Coffee:**

Black		0
W/Tb light cream		30
W/Tb evaporated milk		22
W/Tb heavy cream		50
W/Tb condensed milk		62
W/Tb whole milk		10
W/Tb skim milk		6
1 tsp sugar		16

Collards, cooked	1 cup	76
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**Cookies:**

Animal	1	9
Arrowroot	1	20
Brownies	1	120
Butter	1	42
Butterscotch	1	116
Chocolate	1	50
Chocolate Cream Sandwich	1	112
Chocolate Chip	1	75
Chocolate Marshmallow	1	80
Chocolate Snap	1	17
Coconut bar	1	18
Cream Sandwich	1	106
Date, plain	1	50
Date, iced	1	64
Fig, newton	1	87
Gingersnap	1 sm	20
Graham cracker	1	28
Graham cracker, chocolate covered	1	45
Lady finger	1	37
Macaroon	1	55
Molasses	1	71

**Cookies:**

Oatmeal	1 lg	114
Oreo Cream Sandwich	1	57
Peanut	1	50
Raisin	1	34
Sugar	1	64
Sugar Wafer	1	15
Vanilla Wafer	1	25

**Corn:**

Fresh	1 ear	85
Kernels	1 cup	140
Canned, w/liquid	1 cup	170
Frozen	4 oz	90
Corn fritter	1	95
Corn Grits, dry	1 cup	579
Corn grits, cooked	1 cup	120
Cornmeal, dry	1 cup	527
Cornmeal, cooked	1 cup	119
Cowpeas, cooked	1 cup	151

**Crab:**

Meat	3 oz	90
Deviled	1 med	187
Soft shell, fried	1	135
Apple	1	30
Imperial	3 oz	150
Paste	1 tsp	10
Cracker Meal	1 Tb	43

**Crackers:**

Butter	1	20
Cheese	1 med (10 sm)	15
Matzoth, 6"	1 piece	78
Oatmeal	1	39
Oyster	10 pieces	43
Peanut butter cheese sandwich	1	45
Ritz	1	15

**Crackers:**

Rye wafer	1	25
Ry-Krisp, double square	1	20
Saltine	1	17
Soda	1	23
Triscuit	1	20
Wates	1	30
Wheat thins	1	10
Cranberries	1 cup	54

**Cream:**

Light	1/2 pint	489
Light	1 Tb	30
Half & Half	1/2 pint	330
Half & Half	1 Tb	21
Heavy	1/2 pint	779
Heavy	1 Tb	50
Sour	1 cup	490
Sour	1 Tb	31
Whipped	1 cup	390
Whipped	1 Tb	25

**Cress:**

Garden, fresh	1 lb	106
Garden, cooked	1 cup	73
Water	1 lb	84
Water	Garnish	2
Crisco	1 Tb	110

**Croquettes:**

Beef	1 average	204
Chicken	1 average	175
Fish	1 average	125
Potato	1 average	170
Croutons	1/2" cube	5

**Cucumber:**

Whole	1 med	25
Sliced	10 slices	10

**Currants:**

<b>Currants</b>	<b>1 cup</b>	<b>60</b>
<b>Cooked and sweetened</b>	<b>1 cup</b>	<b>125</b>
<b>Dried and sweetened</b>	<b>1 cup</b>	<b>145</b>

- D -

**Dates:**

Pitted	1 cup	500
W/seed	5	100
Deviled Meats	1 Tb	50
Dextromaltose	1 Tb	40

**Doughnuts:**

Cake, plain	1	135
Cruller, sugared	1	160
Jelly	1	175
Raised. (yeast)	1	121
Raised, sugared or iced	1	150

**Duck:**

Roasted	3-1/2 oz	325
Roasted	Average slice	175
Dumplings	1	70

- E -

**Eel:**

Eel	4 oz	180
Smoked	Average serving	300
Egg foo yong	Average serving	285
Egg roll	1	180
Eggnog, all milk	1 cup	235

**Eggplant:**

Boiled	4-1/2 inch slices	65
Fried	1-1/2 inch slice	50

**Eggs:**

Raw	1 med	75
Raw whites	1 cup	121
Raw white	1 egg	15
Raw yolks	1 cup	875
Raw yolk	1 egg	60
Boiled	1 med	75

**Eggs:**

Creamed	2 eggs, 3 Tb sauce	215
Curried	2 eggs, 3 Tb sauce	230
Deviled	2 halves	135
Dried	1 cup	640
Dried, whites	1 cup	223
Dried, yolks	1 cup	660
Duck	3-1/2 oz	190
Fried	1 med	110
Hard boiled	1 med	75
Omelet, plain	2 eggs	210
Omelet, cheese	2 eggs	290
Omelet, Spanish	2 eggs	325
Poached	1 med	75
Scrambled, w/milk	1 egg	105
Endive	1 lb	90
Endive	15 leaves	10
Escarole	1 lb	90
Escarole	10 leaves	5

- F -

**Fats:**

Bacon	1 Tb	125
Chicken	1 Tb	125
Cooking, lard or Vegetable	1 cup	1770
Cooking, lard or Vegetable	1 Tb	110
Fennel leaves	3-1/2 oz	30

**Figs:**

Fresh	3 average	90
Canned w/syrup	1 cup	300
Canned w/2 Tb syrup	3	130
Canned, low calorie, w/juice	3	45
Dried	1 average	50
Dried, chopped	1 cup	450
Finnan haddie	4 oz (1/2 cup)	100
Finnan haddie, creamed	4 oz (1/2 cup)	175

Fish cakes	1	150
Fish sticks, frozen	4 oz	200
Flounder	4 oz	75
Flounder, baked	1 average	200
<b>Flour:</b>		
Buckwheat	1 cup	340
Cake	1 cup	400
Corn	1 cup	400
Rye	1 cup	285
Soybean	1 cup	230
Wheat	1 cup	400
White	1 cup	400
Frankfurters	2 oz	170
French toast	1 piece	135
<b>Frog legs:</b>		
Uncooked	4 oz	100
Fried	2	140
Fruit cocktail:	1 cup	115
Fruit cocktail, canned, w/syrup	1 cup	175
Fruit cocktail, canned, low calorie	1 cup	75

- G -

Garlic	1 clove	2
Gefuelte fish, uncooked	4 oz	75
<b>Gelatin:</b>		
Plain	1 Tb	35
Fruit flavor	1/2 cup prepared	75
Fruit flavor, fruit added	1/2 cup	85
Ginger root	3-1/2 oz	50
Ginger root, candied	1 oz	95
Goose, uncooked	3-1/2 oz	335
Goose, roast	4 oz	320
Gooseberries	1 cup	60
Goulash, Hungarian	1/2 cup	165

**Grapefruit:**

Fresh	1/2 med	75
Fresh	1/2 lg	100
Fresh	1/2 sm	50
Fresh, sections	1 cup	75
Fresh, pink	1/2 med	55
Canned, w/syrup	1 cup	165
Canned, water pack	1 cup	70

**Grapes:**

Fresh, American types	1 cup	70
Fresh, European types	1 cup	100
Canned, w/syrup	1 cup	185
Canned, low calorie	1 cup	100
Gravy	3 Tb	100
Grits, hominy, cooked	1/2 cup	80
Guava	1	50
Guinea hen	3 1/2 oz	155
Gum:		
Chewing	1 stick	8
Candy coated	2 pieces	23

- H -

**Haddock:**

Baked	1 fillet	155
Creamed	4 oz	150
Fried	1 fillet	200

**Halibut:**

Broiled	4 oz	200
Creamed	4 oz	170

**Ham:**

Baked, all meat	1 oz	97
Boiled, all meat	1 oz	90
Canned, deviled	1 Tb	95
Canned, spiced	1 oz	82
Hock, all meat	1 oz	115

<b>Ham:</b>		
Prosciutto	1 oz	115
Smoked, all meat	1 oz	115
<b>Hash:</b>		
Beef	1/2 cup	145
Canned Corned beef	1/2 cup	60
Canned, turkey	1/2 cup	150
<b>Head Cheese</b>	3 oz	70
<b>Heart:</b>		
Beef, lean	1 oz	30
Beef, braised	1 oz	55
Chicken	1 oz	45
Pork	1 oz	35
<b>Herbs</b>		0
<b>Herring:</b>		
Atlantic	1 med	215
Lake	1 med	140
Pacific	1 med	140
Kippered	1 oz	60
Marinated, w/cream	sm. piece	135
Pickled	1 sm	110
Smoked	1/2 fish	210
Honeydew melon, wedge	1/6 melon	50
Horsemeat	1 oz	61
Horse-radish	1 Tb	5
Huckleberries	1 cup	85

- I -

<b>Ice Cream :</b>		
Chocolate	4 oz ( $\frac{1}{4}$ pt.)	200
Coffee	4 oz ( $\frac{1}{4}$ pt.)	170
Frozen Custard	4 oz ( $\frac{1}{4}$ pt.)	155
Sherbert,w/milk	4 oz ( $\frac{1}{4}$ pt.)	145
Vanilla	4 oz ( $\frac{1}{4}$ pt.)	150

**Ice Cream:**

Vanilla, w/strawberries	4 oz ( $\frac{1}{2}$ pt.)	185
Ices	4 oz ( $\frac{1}{2}$ pt.)	117
Milk	4 oz ( $\frac{1}{2}$ pt.)	135
Cone, w/out ice cream	1	45
Parfait	1	260
Pap, chocolate covered	1	325

**Ice Cream Soda:**

Chocolate, vanilla ice cream	1 (8 oz.)	350
Chocolate, chocolate ice cream	1 (8 oz.)	385
Strawberry	1 (8 oz.)	365

**Ice Cream Sundae:**

Banana Split	1	1165
Butterscotch	1	410
Chocolate, vanilia ice cream	1	400
Chocolate, chocolate ice cream	1	425
Hot Fudge	1	440

- J -

**Jellies and Jams:**

Blackberry jam	1 Tb ( $\frac{1}{2}$ oz.)	55
Blackberry jelly	1 Tb ( $\frac{1}{2}$ oz.)	50
Cranberry jelly	1 Tb ( $\frac{1}{2}$ oz.)	35
Currant jelly	1 Tb ( $\frac{1}{2}$ oz.)	50
Guava butter	1 Tb ( $\frac{1}{2}$ oz.)	40
Guava jelly	1 Tb ( $\frac{1}{2}$ oz.)	50
Grape jelly	1 Tb ( $\frac{1}{2}$ oz.)	55
Grape jam	1 Tb ( $\frac{1}{2}$ oz.)	60
Orange marmalade	1 Tb ( $\frac{1}{2}$ oz.)	55
Papaya marmalade	1 Tb ( $\frac{1}{2}$ oz.)	55
Plum jam	1 Tb ( $\frac{1}{2}$ oz.)	60
Strawberry jam	1 Tb ( $\frac{1}{2}$ oz.)	55

**Juices:**

Apple	1 cup	125
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**Juices:**

Apricot nectar	1 cup	135
Blackberry	1 cup	77
Blueberry	1 cup	135
Carrot	1 cup	50
Cranberry	1 cup	135
Currant	1 cup	110
Grape	1 cup	165
Grapefruit	1 cup	85
Grapefruit, frozen, unsweetened	1 cup	95
Grapefruit, frozen, sweetened	1 cup	105
Lemon	1 cup	60
Lemon	1 Tb	4
Lime	1 cup	65
Lime	1 Tb	5
Loganberry	1 cup	135
Nectarine	1 cup	105
Orange, California Valencia	1 cup	105
Orange, Florida	1 cup	105
Orange, frozen	1 cup	105
Papaya	1 cup	130
Peach nectar	1 cup	115
Pear nectar	1 cup	125
Pineapple	1 cup	120
Prune	1 cup	170
Raspberry	1 cup	90
Sauerkraut	1 cup	40
Tangerine	1 cup	95
Tomato	1 cup	50
V-8	1 cup	98

- K -

Kale, cooked or frozen	1 cup	45
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**Kidney:**

<b>Beef or veal</b>	<b>4 oz</b>	<b>160</b>
Lamb	4 oz	120
Pork	4 oz	125
<b>Kohlrabi, diced</b>	<b>1 cup</b>	<b>40</b>
<b>Kohlrabi, cooked or frozen</b>	<b>1 cup</b>	<b>50</b>
<b>Kumquats</b>	<b>6</b>	<b>60</b>

- L -

**Lamb:**

<b>Breast, stewed</b>	<b>4 oz</b>	<b>365</b>
<b>Chops, cooked-untrimmed</b>	<b>3 oz ( 1 average)</b>	<b>390</b>
<b>Chops, cooked-lean</b>	<b>3 oz ( 1 average)</b>	<b>160</b>
<b>Sirloin, broiled-lean</b>	<b>3 oz ( 1 average)</b>	<b>120</b>
<b>Ground, broiled patty</b>	<b>3 oz</b>	<b>130</b>
<b>Roast, lean and fat</b>	<b>3 oz</b>	<b>235</b>
<b>Roast, lean</b>	<b>3 oz</b>	<b>160</b>
<b>Lamb Curry</b>	<b>4 oz</b>	<b>385</b>
<b>Lamb Shish Kebob</b>	<b>3 oz</b>	<b>250</b>
<b>Lard</b>	<b>1 cup</b>	<b>1985</b>
<b>Lard</b>	<b>1 Tb</b>	<b>125</b>
<b>Leeks</b>	<b>3 average</b>	<b>40</b>
<b>Lemon</b>	<b>1 med</b>	<b>20</b>
<b>Lemonade</b>	<b>8 oz</b>	<b>75</b>
<b>Lentils</b>	<b>4 oz</b>	<b>100</b>
<b>Lettuce, solid head</b>	<b>1</b>	<b>70</b>
<b>Lettuce, loose head</b>	<b>1</b>	<b>35</b>
<b>Lime</b>	<b>1 med</b>	<b>20</b>
<b>Limeade</b>	<b>8 oz</b>	<b>75</b>

**Liquid diets, canned (CALORIE VALUES MARKED ON CAN)****Liver:**

<b>Beef, fried</b>	<b>3 oz</b>	<b>180</b>
<b>Calves, fried</b>	<b>3 oz</b>	<b>150</b>
<b>Canned, strained</b>	<b>1 oz</b>	<b>30</b>

**Liver:**

Chicken, chopped	3 oz	150
Lamb, fried	3 oz	150
Pork, fried	3 oz	145
Liver Loaf, 1 slice	1 oz	80
Liver Spread	2 Tb	95
Liverwurst	2 oz	150

**Lobster:**

Fresh	12 oz	88
Baked or broiled, 1	1½ lb	310
Broiled tails	1 average	175
Canned meat	3 oz	75
Creamed	1/2 cup	150
Lobster Cantonese, 1 serving	3½ oz(approximately)	470
Lobster Cocktail	½ cup meat, 2 Tb sauce	115
Lobster Newburgh	1/2 cup	185
Lobster Paste	1 tsp	15
Lobster Thermidor	1 lobster	400

**Loganberries:**

Fresh	1 cup	90
Canned	1 cup	98
Loquats	4 oz	55
Lotus root	4 oz	400
Lotus seed	1 oz	110
Lox, smoked salmon	3 oz	285
Luncheon meat, 1 slice	1 oz	81
Macaroni, cooked	1 cup	155
Macaroni & Cheese, baked	4 oz 1 serving	235

**Mackerel:**

Broiled	3 oz	200
Canned	3 oz	150
Salt	3 oz	225
Smoked	1/4 fish	250
Malted Milk Powder	1 Tb	50
Mango	1 average	90

Margarine	1 cup	1615
Margarine	1 Tb	100
Margarine	1 pat	50
Meat Loaf, beef/pork, 1 slice	3 oz	275
Meat Ball, 1 ball	1 1/2 oz	150
Melon Balls	1 cup	160
Meringue	1/4 cup	35
<b>Milk:</b>		
Whole	1 cup	165
Skim, non-fat	1 cup	90
Buttermilk, skim	1 cup	90
Canned, evaporated	1 cup	345
Canned, evaporated	1 Tb	22
Canned Condensed, sweetened	1 cup	985
Canned Condensed, sweetened	1 Tb	62
Chocolate, whole	1 cup	190
Chocolate, skim	1 cup	110
Coconut	1 cup	60
Dry, whole	1 cup	515
Dry, whole	1 Tb	39
Dry, whole, reconstituted	1 cup	160
Dry, non-fat	1 cup	290
Dry, non-fat	1 Tb	28
Dry, non-fat, reconstituted	1 cup	85
Goats	1 cup	164
Milkshake, w/ice cream, flavored	8 oz	310
Malted Milk,w/ice cream, flavored	8 oz	360
Mint, fresh		0
<b>Muffins:</b>		
Blueberry	1 average	125
Bran	1 average	105
Corn	1 average	105
Date	1 average	140
Egg	1 average	100
English	1 average	125

**Muffins:**

Raisin	1 average	130
Rye	1 average	135
Soy	1 average	119
Whole Wheat	1. average	120
<b>Mushrooms :</b>		
Sauteed	1 cup	25
Muskmelon	1/2 med	40
Mussels	6 med	75

**Mustard:**

Dry		0
Prepared	1 Tb	10
Greens, cooked	16 oz	100
Greens, cooked	1 cup	30
<b>Mutton:</b>		
Lean & fat	4 oz	360
Lean	4 oz	240

**-N-**

Nectarines	1 med	30
<b>Noodles:</b>		
Egg, cooked	1 cup	200
Fried	1 cup	360

**- O -****Oils:**

Codliver	1 Tb	100
Corn	1 cup	1945
Corn	1 Tb	124
Cottonseed	1 cup	1945
Cottonseed	1 Tb	124
Mineral	1 cup	80
Mineral	1 Tb	5

## Oils:

Olive	1 cup	1945
Olive	1 Tb	124
Palm, red, unrefined	1 cup	1768
Palm, red, unrefined	1 Tb	55
Peanut	1 cup	1945
Peanut	1 Tb	124
Solid	1 cup	1945
Solid	1 Tb	124

## Okra:

Cooked	1 lb	148
Cooked, 6 pods	2 1/2 oz	25

## Olives:

Green	1 lg	6
Stuffed	1 lg	11
Ripe	1 lg	8

## Onions:

Raw	1 med	50
Raw, chopped	1 Tb	4
Cooked	1 cup	80
Creamed	1/2 cup	150
Dehydrated	1 Tb	12
French fried	20 rings	150
Fresh green	6	25
Scalloped	1/2 cup	145

## Oranges:

Fresh	1 lg	105
Fresh	1 med	70
Fresh	1 sm	50
Fresh	cup sections	90
Ovaltine	1 cup	220
Ovaltine, w/skim milk	1 cup	155
Ovaltine, chocolate	1 cup	250
Oyster plant, cooked	1/2 cup	35

**Oyster:**

Stew, w/skim milk	1 cup	155
Stew, w/whole milk	1 cup	210
Stew, w/cream	1 cup	250
Raw, 14-18	1 cup	160
Raw, Bluepoint	6-9 pieces	100
Raw, Cape Cod	5-8 pieces	100
Fried	6 pieces	300
Scalloped	6 pieces	350
Rockefeller	6 pieces	185

**Pancakes:**

Buckwheat	1-4 inch cake	47
Wheat	1-4 inch cake	60
Papaya, cubed	1 cup	71
Parsley		0

**Parsnips:**

Fresh	4 oz	88
Cooked	1 cup	95
Cooked	1 lb	274
Passion Fruit	1/2 cup	71
Pastrami	1 oz	85

**Pastries:**

Apple Turnover	1 average	275
Cream puff	1 average	296
Cream puff, chocolate	1 average	310
Cream puff, shell	1 average	85
Danish	1 average	200
Eclair, chocolate custard	1 average	250
Eclair, chocolate cream	1 average	300
French	1 average	200-225
Petit fours	1 average	200
Strudel	1 average	200
Tart	1 average	150
Tart, fruit filled	1 average	200
Pati de foie gras	3 oz	200

Pati de foie gras	1 Tb	84
Peaches:		
Fresh	1 med	35
Fresh, sliced	1 cup	65
Canned, w/syrup	1 cup	185
Canned, w/2 Tb syrup	2 halves	80
Canned, water pack	1 cup	65
Canned, low calorie	1 cup	55
Canned, strained	1 oz	20
Dried, cooked & unsweetened	1 cup	220
Dried, cooked & sweetened	1 cup	365
Frozen	12 oz	265
Frozen	1/2 cup	90
Peanut Butter	1 Tb	90
Pears:		
Fresh	1	95
Fresh, sliced	1 cup	120
Canned, w/syrup	1 cup	175
Canned, w/syrup	2 halves	80
Canned, water pack	1 cup	75
Canned, low calorie	1 cup	33
Canned, strained	1 oz	15
Peas:		
Fresh, cooked	1 lb	316
Fresh, cooked	1 cup	110
Canned, w/liquid	1 cup	170
Canned, strained	1 oz	10
Dried	2 Tb	100
Frozen	1/2 cup	75
Split, cooked	1 cup	290
Peppers:		
Green	1 med	15
Stuffed	1 med	175
Red	1 med	20

**Perch:**

Fresh, lake	4 oz	75
Fresh, ocean	4 oz	85
Fried	3 oz	195
Persian Melon, 1/6 wedge	1	52
Persimmons	1 med	95

**Pheasant:**

Boned	1/2 cup	150
Roasted	4 oz	100

**Pickles:**

Relish	1 Tb	15
Relish, mustard	1 Tb	25
Cucumber, bread & butter	1 cup	120
Cucumber	6 slices	30
Dill	1 lg	15
Sour	1 lg	15
Sweet	1 med	20

**Pie Crust:**

Double crust	9 inch	1315
Bottom crust	9 inch	660
Graham cracker, bottom crust	9 inch	1236

**Pies: 9" Piece, 1/6 pie**

Apple, double crust	1 piece	331
Apricot, double crust	1 piece	328
Banana Cream, single crust	1 peice	260
Berry, double crust	1 piece	340
Blackberry, double crust	1 piece	350
Blueberry, double crust	1 piece	291
Butterscotch, single crust	1 piece	265
Cherry, double crust	1 piece	340
Chocolate Meringue, single crust	1 piece	275
Coconut Custard, single crust	1 piece	266
Cream, single crust	1 piece	260
Custard, single crust	1 piece	266
Gooseberry, double crust	1 piece	298

**Pies: 9" Piece, 1/6 pie**

Lemon, chiffon/meringue, single crust	1 piece	300
Mincemeat, double crust	1 piece	340
Peach, fresh, double crust	1 piece	330
Peach, cream, single crust	1 piece	353
Pecan, single crust	1 piece	480
Pineapple, double crust	1 piece	340
Pineapple, cheese, single crust	1 piece	340
Pineapple, cream, single crust	1 piece	350
Prune, double crust	1 piece	330
Pumpkin, single crust	1 piece	265
Raisin, double crust	1 piece	350
Rhubarb, double crust	1 piece	230
Shoofly, single crust	1 piece	440
Strawberry, single crust	1 piece	275
Strawberry, cream, single crust	1 piece	350

**Pigs Feet:**

Boiled	4 oz	185
Pickled	4 oz	230
Pike	4 oz	85
Pimiento, canned	1 med	10

**Pineapple:**

Fresh, chunks	1 cup	75
Fresh	1 slice	45
Canned	1 slice	95
Canned, crushed	1 cup	205
Canned, low calorie	1 cup	95
Candied	1 stick	120
Frozen	4 oz	95
Pizza Pie	1 piece, average	245

**Plums:**

Fresh	1 med	30
Fresh, halves	1 cup	95
Canned, w/syrup	1 cup	185
Canned, halves, w/syrup	6	100

**Plums:**

Canned, low calorie	1 cup	110
Paha, Hawaiian	1 cup	50
Pomegranate	1 med	90
Pompano, broiled	1 piece	300
Popcorn, no butter	1 cup	55
Popcorn, carameled	1 cup	200
Popover	1 med	90
Porgy:	4 oz	110
Fried	4 oz	280

**Pork: cooked**

Chops, untrimmed	3 oz	370
Chops, lean	3 oz	225
Roast, untrimmed	3 oz	340
Roast, lean	3 oz	215
Salt, fried	2 slices	340
Simmered, untrimmed	3 oz	355
Simmered, lean	3 oz	180
Sirloin	3 oz	195
Spareribs	3 med	125
Tenderloin	3 oz	205
Postum	1 cup	36
Potato Chips	10 chips	110
Potato pancakes	1	110

**Potatoes:**

Baked	1 med	95
Boiled	1 med	95
Boiled, diced	1 cup	105
Canned	3-4 sm	120
Creamed	1/2 cup	115
French fried	8 pieces	150
French fried, frozen	10 pieces	95
Fried	1 cup	480
Hash browned	1 cup	470
Mashed, w/milk	1 cup	145

**Potatoes:**

Mashed, w/milk and butter	1 cup	230
Scalloped	1 cup	240

**Potatoes, Sweet:**

Raw	4 oz	140
Baked	1 med	155
Boiled	1 med	170
Candied	1 serving	300
Yam, mashed	1 cup	210

Pretzels, very large	1	135
Standard size	5 sticks or 1 sm	20

Prickley Pear	1	50
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Prunes:	4 med	70
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Canned, strained	1 oz	25
Stewed, w/juice, unsweetened	1 cup	300
Stewed, w/juice, sweetened	1 cup	480

**Puddings:**

Applebrown betty	1/2 cup	175
Apple dumplings	1	345
Apple snow	1/2 cup	70
Apricot whip	1/2 cup	100
Banana Custard	1/2 cup	125
Banana whip	1/2 cup	85
Bavarian Orange	1/2 cup	180
Biscuit tortoni	1	155
Blancmange	1/2 cup	135
Bread	1/2 cup	150
Butterscotch	1/2 cup	175
Caramel	1/2 cup	150
Chocolate	1/2 cup	175
Cornstarch, caramel	1/2 cup	168
Cornstarch, chocolate	1/2 cup	175
Cornstarch, vanilla	1/2 cup	155
Custard	1/2 cup	140
Fig	1/2 cup	125

**Puddings:**

Indian, corn	1/2 cup	150
Junket	1/2 cup	107
Lemon Custard	1/2 cup	140
Plum	1/2 cup	150
Prune whip	1/2 cup	100
Rice	1/2 cup	170
Rice, w/raisins	1/2 cup	175
Tapioca	1/2 cup	150
Vanilla	1/2 cup	140

**Pumpkin:**

Canned	1 cup	75
Seeds	1 oz	150

- Q -

Quail, broiled	1	145
Quince	1 med	35

- R -

Rabbit, broiled	1/4	150
Radishes:		
Chinese	4 sm	10
Raisins	1 cup	460
Raisins	1 Tb	25
Raisins, stewed, sweetened	1 cup	570
Raspberries:		
Black, fresh	1 cup	100
Red, fresh	1 cup	70
Canned, w/syrup	1 cup	200
Canned, waterpack	1 cup	100
Frozen	3 oz	84
Ravioli, cheese, w/sauce	4 squares	360
Red Snapper	4 oz	100

**Rhubarb:**

Fresh, diced	1 cup	20
Cooked, sweetened	1 cup	385
Canned, low calorie	1 cup	32
Frozen	1/2 cup	138

**Rice:**

Brown, cooked	1 cup	140
Fried	1 cup	260
White, cooked	1 cup	170
Wild, cooked	1 cup	135
Spanish	1/2 cup	90

**Rolls:**

Hamburger	1	150
Hard	1	160
Frankfurter	1	160
French	1	100
Onion	1	150
Parker House	1	125
Plain	1	115
Sweet	1	175
Wheat	1	100
Romaine		0
Rutabaga, cooked	1 cup	50

- S -

**Salad Dressing:**

Bacon, vinegar	1 Tb	30
Blue cheese	1 Tb	90
French	1 Tb	60
Mayonnaise	1 Tb	110
Mayonnaise,w/mineral oil	1 Tb	10
Roquefort	1 Tb	100
Russian	1 Tb	105
Thousand Island	1 Tb	75

**Salad Dressing:**

Vinegar & oil, 50/50	1 Tb	60
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**Salads:**

Apple & carrot	1/2 cup	100
Asparagus	5 spears	35
Aspic	1 serving	110
Avocado, w/dressing	1/2 cup	185
Avocado, tomato-cottage cheese	1/2 cup	245
Carrot-raisin	3 Tb	150
Cole slaw	1/2 cup	50
Chicken-celery	1/2 cup	200
Crab-celery	1/4 cup	100
Egg & tomato	1/2 each	60
Eggs, deviled	1/2	70
Gelatin, w/fruit	1/2 cup	125
Gelatin, w/vegetables	1/2 cup	100
Lettuce & tomato	1 serving	35
Lobster	1/4 cup	110
Macaroni	1/2 cup	165
Mixed greens	1 serving	10
Mixed fresh vegetable, tossed	1 cup	75
Mixed fresh fruit	1/2 cup	160
Potato & onion	1/2 cup	184
Salmon, w/celery	1/2 cup	190
Shrimp, w/celery	1/2 cup	170
Tomato & cucumber	1 each	40
Tomato aspic	1/2 cup	50
Tuna	1/2 cup	150
Waldorf	1/2 cup	140
Salami	1/4 inch slice	130
<b>Salmon:</b>		
Canned, Chinook or King	3 oz	170
Canned, coho or silver	3 oz	140
Canned, pink or humpback	3 oz	120
Canned, sockeye or red	3 oz	150

**Salmon:**

Creamed on toast	1/2 cup	300
Loaf	3/4 inch slice	250
Smoked	1 sm slice	30
Steak, baked or broiled	1/2 inch slice	200
Sand Dabs	2	75

**Sandwiches: two slices of bread**

Bacon & egg	1	350
Bacon-lettuce & tomato	1	300
Barbecue beef	1	260
Barbecue pork	1	310
Bologna	1	360
Cheese, cheddar or swiss	1	300
Cheese spread	1	320
Cheeseburger	1	450
Chicken, sliced	1	270
Chicken, salad	1	250
Club, 3 decker	1	590
Corned beef	1	250
Crab roll	1	280
Denver or Western	1	325
Egg, fried	1	285
Egg, salad	1	300
Ham, baked or boiled	1	350
Ham, fried	1	470
Ham salad	1	475
Ham & cheese	1	400
Hamburger	1	350
Hero	1 lg	800
Hot dog	1	250
Liverwurst	1	275
Lunch meat, prepared	1	375
Meat loaf	1	425
Pastrami	1	350
Peanut butter	1	325

**Sandwiches: two slices of bread**

Peanut butter & jelly	1	350
Roast beef	1	300
Roast pork	1	400
Steak	1	430
Tomato, w/lettuce	1	150
Tongue	1	200
Tuna salad	1	325
Turkey, sliced	1	350

**Sandwiches: hot w/two slices bread w/gravy**

Beef	1	400
Chicken	1	350
Pork	1	500
Turkey	1	400

**Sardines:**

Canned	3 oz	170
Canned in oil, drained	3 oz	180
Canned in tomato sauce	3 oz	180

**Sauces:**

A-1	1 Tb	15
Barbecue	1 Tb	40
Butterscotch	1 Tb	85
Caramel	1 Tb	50
Cheese	1/4 cup	130
Chili	1 Tb	15
Chocolate	1 Tb	65
Cranberry	1/4 cup	135
Cream	1 Tb	35
Creole	1/4 cup	100
Fudge	1 Tb	85
Garlic w/butter	1 Tb	100
Hard	1 Tb	100
Hollandaise	1/4 cup	180
Lemon	1 Tb	25
Marshmallow	1 Tb	75

**Sauces:**

Meat, Italian	1/4 cup	46
Raisin	1/4 cup	125
Sour Cream	1 Tb	55
Soy	1 Tb	10
Tarter	1 Tb	95
Tomato	1/4 cup	40
White	1/4 cup	105
Worcestershire	1 Tb	10
Sauerbraten	1 sm slice	110
Sauerkraut	1 cup	30

**Sausage:**

Polish	1 slice	80
Pork	4 oz	500
Pork, cooked	1 patty	185
Veinna, canned	4 oz	240
Scallops:	4 oz	90
Broiled	4 oz	175
Fried	4 lg	300
Scrapple	1 slice	100
Sesame seed	1 oz	160
Shad	4 oz	190
Shad roe	1/2 w/bacon	360
Shortcake, fresh fruit	1 med serving	375

**Shrimp:**

Fresh, med size	.1	10
Canned, dry pack	3 oz	108
Canned, wet pack	3 oz	75
Fried, jumbo	3	250
Shrimp cocktail w/sauce	6 shrimp- $\frac{1}{2}$ cup sauce	100
Shrimp Creole	6 shrimp- $\frac{1}{2}$ cup sauce	170
Smelt:	2 sm	50
Fried	2 sm	250
Snail, broiled in garlic butter	6	150
Sole fillet	4 oz	100

**Soups:**

Barley	1 cup	117
Bean	1 cup	190
Beef	1 cup	100
Bouillon	1 cup	10
Chicken	1 cup	75
Chicken broth	1 cup	50
Chicken, gumbo	1 cup	155
Chicken, noodle or rice	1 cup	100
Chicken, vegetable	1 cup	60
Clam chowder, tomato	1 cup	90
Consomme	1 cup	10
Green pea	1 cup	140
Gumbo creole	1 cup	100
Lentil	1 cup	130
Lobster bisque	1 cup	200
Mock turtle	1 cup	86
Mulligatawny	1 cup	150
Noodle	1 cup	117
Onion, natural	1 cup	64
Onion, French	1 cup	125
Oxtail	1 cup	150
Pepper pot	1 cup	100
Potato	1 cup	185
Scotch broth	1 cup	125
Split pea	1 cup	200
Tomato, natural	1 cup	100
Vegetable	1 cup	80
Vichyssoise	1 cup	275

**Soups, Cream:**

Asparagus	1 cup	200
Celery	1 cup	200
Chicken	1 cup	200
Clam chowder	1 cup	200
Corn chowder	1 cup	210

**Soups, Cream:**

Fish chowder	1 cup	210
Mushroom	1 cup	200
Onion	1 cup	200
Pea	1 cup	205
Potato	1 cup	205
Tomato	1 cup	175

**Soybean:**

Curd	1	85
Milk	4 oz	40
Sprouts	1 cup	50

**Spaghetti:**

Cooked	1 cup	155
Cooked, w/meat sauce	1 cup	350
Cooked, w/meat balls	1 cup, 2 meat balls	550
Cooked, w/tomato sauce	1 cup	300
Canned	1 cup	240

**Spices****Spinach:**

Raw	4 oz	20
Cooked, canned	1 cup	45
Canned, strained, creamed	1 oz	10
Squab, broiled	1 bird	300

**Squash:**

Baked	1 cup	100
Boiled	1 cup	85
Summer, boiled	1 cup	35
Summer, canned, strained	1 oz	10
Zucchini, boiled	1 cup	35
Squid	4 oz	90
Squid, dried	4 oz	345

**Stew:**

Beef & vegetable	1 cup	250
Lamb & vegetable	1 cup	250
Rabbit	1 cup	420

**Stew:**

<b>Veal &amp; vegetable</b>	<b>1 cup</b>	<b>240</b>
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**Strawberries:**

<b>Fresh</b>	<b>1 cup</b>	<b>50</b>
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<b>Frozen</b>	<b>4 oz</b>	<b>120</b>
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<b>Stroganoff</b>	<b>Average serving</b>	<b>450</b>
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<b>Stuffing, bread</b>	<b>1/2 cup</b>	<b>230</b>
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<b>Sturgeon</b>	<b>Average serving</b>	<b>300</b>
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<b>Sturgeon, smoked</b>	<b>1 slice</b>	<b>100</b>
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<b>Succatosh</b>	<b>1 cup</b>	<b>150</b>
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**Sugar:**

<b>Brown</b>	<b>1 Tb</b>	<b>50</b>
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<b>Brown</b>	<b>1 cup</b>	<b>800</b>
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<b>Confectioners</b>	<b>1 Tb</b>	<b>30</b>
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<b>Confectioners</b>	<b>1 cup</b>	<b>480</b>
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<b>Granulated</b>	<b>1 Tsp</b>	<b>16</b>
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<b>Granulated</b>	<b>1 lump</b>	<b>27</b>
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<b>Granulated</b>	<b>1 Tb</b>	<b>48</b>
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<b>Granulated</b>	<b>1 cup</b>	<b>770</b>
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<b>Maple</b>	<b>1/2 " cube</b>	<b>16</b>
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**Sweetbreads :**

<b>Broiled</b>	<b>1</b>	<b>75</b>
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<b>Creamed</b>	<b>1/2 cup</b>	<b>125</b>
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<b>Swiss steak</b>	<b>1 serving</b>	<b>450</b>
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<b>Swordfish, broiled</b>	<b>3 oz</b>	<b>150</b>
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**Syrup:**

<b>Chocolate</b>	<b>1 Tb</b>	<b>40</b>
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<b>Corn</b>	<b>1 Tb</b>	<b>56</b>
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<b>Corn</b>	<b>1 cup</b>	<b>900</b>
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<b>Honey</b>	<b>1 Tb</b>	<b>60</b>
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<b>Maple</b>	<b>1 Tb</b>	<b>50</b>
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<b>Molasses, light</b>	<b>1 Tb</b>	<b>50</b>
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<b>Molasses, med</b>	<b>1 Tb</b>	<b>46</b>
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<b>Molasses, blackstrap</b>	<b>1 Tb</b>	<b>45</b>
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<b>Sugar</b>	<b>1 Tb</b>	<b>100</b>
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- T -

Tamarind	4 oz	275
Tangerine	1 med	40
Tapioca, dry	1 cup	550
Tea:	1 cup	0
W/milk	1 cup	10
W/1 tsp. sugar	1 cup	16
Toast:		
Rusk	1 piece	50
Melba	1 piece	25
Zwieback	1 piece	35
Tomatoes:		
French	1 med	30
Canned	1 cup	45
Puree, canned	1 cup	90
Scalloped	1 cup	135
Stewed	1 cup	50
Tortilla	1 5 inch	50
Tripe, boiled	1 serving	85
Trout:		
Broiled	4 oz	210
Smoked	4 oz	135
Tuna:		
Fresh	4 oz	200
Canned	4 oz	215
Canned, water packed	4 oz	190
Turkey:		
Roast	4 oz	300
Creamed	1 cup	430
Smoked	1 oz	50
Turnip greens, cooked	1 cup	40
Turnips:		
Fresh, diced	1 cup	40

## Turnips:

Boiled	1 cup	40
Boiled, mashed	1 cup	60

- V -

Vanilla extract	1/2 tsp	3
<b>Veal:</b>		
Chop, lean	3 oz, 1 med	185
Cutlet, broiled	3 oz	185
Cutlet, breaded	4 oz, 1 med	225
Roast, lean	3 oz	195
Roast, lean and fat	3 oz	305
Stew meat, cooked	3 oz	250
Venison, roast	4 oz	225
Vinegar	1 Tb	2

- W -

Waffles	1 med	220
Watermelon	1 wedge	120
Welsh rabbit on toast	1 serving	225
Wheat germ	1 Tb	15
<b>White fish:</b>		
Steamed	4 oz	115
Smoked	4 oz	180

- Y -

Yeast	1 cake	22
Yogurt	1 cup	120

NUTS

<u>ITEM</u>	<u>SERVICE</u>	<u>CALORIES</u>
<b>Almonds:</b>		
In the shell	1 cup	238
Shelled	1/2 cup	424
Salted	15 average nuts	100
Chocolate covered	6 average nuts	100
<b>Brazil:</b>		
Shelled	1/2 cup	402
1 nut	Average	26
Butternuts, 2-3 nuts	1 oz	200
<b>Cashews:</b>		
Cashews:	1 oz	164
Roasted	1 cup	770
6-8 nuts	Average	88
<b>Chestnuts</b>	1 large	15
<b>Filberts</b>	1	9
<b>Hazelnuts</b>	8 nuts	110
<b>Hickory Nuts</b>	1 oz	100
<b>Lichee:</b>		
Dried	6 nuts	45
3 oz		120
<b>Macadamia</b>	10 nuts	100
<b>Mixed</b>	10 nuts	100
<b>Peanuts:</b>		
Blanched	1 cup, halves	840
Chopped	1 Tb	50
Spanish	1/4 cup	240
Spanish	10-12 nuts	50
<b>Pecans:</b>		
Halves	1 cup	740
Whole	6	104
Chopped	1 Tb	52
<b>Pine</b>	12-15 nuts	100
<b>Pistachio</b>	30 nuts	90
<b>Walnuts:</b>		
Black, chopped	1/2 cup	400

**Walnuts:**

English	10 halves	90
English, chopped	1/2 cup	390
Water Chestnuts	1	5

SOFT DRINKS

<u>ITEM</u>	<u>QUANTITY</u>	<u>CALORIES</u>
Cherry soda	12 oz	120
Coca Cola	6 oz	80
Cream Soda	12 oz	155
Ginger ale	6 oz	60
Grape soda	12 oz	155
Lemon soda	12 oz	148
<b>Low Calorie; AS MARKED</b>		
Orange soda	12 oz	145
Pepsi Cola	12 oz	155
Root beer	12 oz	155
Sparkling soda		0
Quinine Water	6 oz	65

**ALCOHOLIC BEVERAGES**  
**(Standard Servings)**

<u>ITEM</u>	<u>QUANTITY</u>	<u>CALORIES</u>
<b><u>BEER &amp; CIDER:</u></b>		
Ale, light	12 oz	150
Ale, Imported	8 oz	150
Beer, bock	12 oz	200
Beer, lager	12 oz	165
Cider, fermented	4 oz	50
Porter	8 oz	145
Stout	8 oz	145
<b><u>SERVINGS</u></b>		
<b><u>COCKTAILS &amp; HIGHBALLS:</u></b>		
Alexander, brandy	1	225
Bacardi cocktail	1	155
Bloody Mary	1	140
Bourbon/whiskey & soda	1 oz whiskey	85
Bourbon/whiskey & ginger ale	1 oz whiskey	150
Champagne cocktail	1	125
Daiquiri	1	140
Eggnog	1	335
Gimlet	1	135
Gin fizz	1	165
Grasshopper	1	235
Hot buttered rum	1	250
Irish coffee	1	225
Manhattan	1	175
Martini	1	135
Mint julep	1	200
Old fashioned	1	145
Orange blossom	1	150
Pink lady	1	180
Rob Roy	1	190
Rum and Cola	1	230

COCKTAILS & HIGHBALLS:

Rum punch	1	300
Sazarac	1	180
Scotch & Soda	1 oz whisky	75
Scotch mist	1	115
Screwdriver	1	165
Sidecar	1	160
Sloe gin fizz	1	155
Stinger	1	145
Tom Collins	1	165
Whiskey, SEE BOURBON		
Whiskey sour	1	140

LIQUORS & WHISKEYS:

Bourbon whiskey	1 oz	85
Canadian whiskey	1 oz	85
Gin	1 oz	72
Irish whiskey	1 oz	85
Rum	1 oz	100
Rye whiskey	1 oz	85
Scotch whisky	1 oz	75
Sloe gin	1 oz	58
Vodka	1 oz	85

LIQUEURS & BRANDIES:

Anisette	1 oz	75
Applejack	1 oz	75
Benedictine	1 oz	75
B & B	1 oz	75
Brandy, California	1 oz	75
Brandy, cognac	1 oz	75
Chartreuse	1 oz	75
Cherry brandy	1 oz	90
Cherry heering	1 oz	60
Creme de cacao	1 oz	75
Creme de menthe	1 oz	90

Curacao	1 oz	70
Drambuie	1 oz	65
Kummel	1 oz	70

WINES:

Bouquet (Fruit)	3 1/2 oz	165
Champagne	3 1/2 oz	90
Dinner, dry red (Burgundy - Chianti - Claret)	3 1/2 oz	65-75
Dinner, dry white (Chablis - Maselle - Rhine)	3 1/2 oz	60-70
Dubonnet	3 1/2 oz	185
Maderia	3 1/2 oz	110
Malaga	3 1/2 oz	155
Port	3 1/2 oz	165
Sherry	3 1/2 oz	140
Vermouth, dry	3 1/2 oz	110
Vermouth, sweet	3 1/2 oz	175

**FOOD FOR FITNESS** (Taken from Department of Agriculture Leaflet No. 24,  
Same Title)

**A Daily Food Guide**

Each day the food we eat should supply us with many different nutrients to maintain health, vigor and well-being.

- o Protein for growth and body repair is essential to every living cell. It is continually being changed and excreted in the body processes and therefore must be replaced. Protein also increases the rate of oxidation of the food you eat, thus releasing usable energy within the body (this is the rationale for the "high protein diet").
- o Fat and Carbohydrate: Fuel and energy foods. An important function of carbohydrates in your diet is to aid in the assimilation of other food elements. When insufficient carbohydrates are included in your diet an additional change takes place in the body chemistry so that protein is used in the digestion processes. (See A Weight Reduction Diet, page 11.)
- o Minerals and vitamins for growth and to keep the body functioning properly.

Most foods contain more than one nutrient. But no single food contains all of them in the amounts we need. Therefore, choosing foods wisely means selecting a variety of foods for your daily diet that together provide nutrients in the amounts needed.

This Daily Food Guide is one way to choose food wisely. With it you can get the nutrients needed from a variety of foods.

**How to Use This Guide**

To use this Daily Food Guide, select the main parts of your diet from the four broad food groups. To this add other foods as needed for nutrients and to make your meals more appealing and satisfying.

Some pointers as a guide in using this plan:

- o Choose at least the minimum number of servings from each of the four broad food groups. Servings will differ in quantity to correspond to your caloric requirements.

- o Make choices within each group according to the suggestions and to add variety to your diet.
- o Choose additional foods to round out your meals. Make selections both from foods in the four main groups and from those listed under "Other Foods." These additional food items should add the nutrients and calories to complete your daily requirements.
- o Children need enough food energy, "calories," to support normal activity and growth. Adults need enough to maintain body weight at the level most favorable to health and well-being.
- o Try to include some meat, poultry, fish, eggs or milk in each meal.

#### Vegetable-Fruit Group

Foods Included: All vegetables and fruit.

#### Sources of Vitamin C

Good Sources: Grapefruit or grapefruit juice, oranges or orange juice, cantaloupe, guave, mango, papaya, raw strawberries, broccoli, brussel sprouts, green pepper, sweet red pepper.

Fair Sources: Honeydew melon, lemon, tangerine or tangerine juice, watermelon, asparagus tips, raw cabbage, collards, garden cress, kale, kohlrabi, mustard greens, potatoes and sweet potatoes cooked in the jackets, spinach, tomatoes or tomato juice, turnip greens.

#### Sources of Vitamin A

Dark green and deep yellow vegetables and some fruits, namely: apricots, broccoli, cantaloupe, carrots, chard, collards, cress, kale, mango, persimmons, pumpkin, spinach, sweet potatoes, turnip greens and other dark green leaves, winter squash.

#### Contribution to Diet

Fruits and vegetables are valuable to the diet chiefly for the vitamins and minerals they contain. In this plan this group is intended to supply nearly all of the Vitamin C and over half of the Vitamin A needed.

Vitamin C is needed for healthy gums and body tissues.

Vitamin A contributes to growth, vision and a healthy condition of the skin and other body surfaces.

#### Amounts Recommended

Choose four or more servings every day, including:

- o one serving of a "good source" of Vitamin C or two servings from a "fair source"
- o one serving every other day of a "good source" of Vitamin A. If the foods chosen for Vitamin C are also a "good source" of Vitamin A, the additional source of Vitamin A food may be omitted.

The remaining one to three or more servings may be of any vegetable or fruit including those that are valuable sources of Vitamin C and Vitamin A.

Count as one serving:  $\frac{1}{2}$  cup of vegetable or fruit; or a portion as ordinarily served, such as one medium apple, banana, orange or potato, half a medium grapefruit or cantaloupe, or the juice of one lemon.

#### Milk Group

##### Foods Included:

Milk: fluid whole, evaporated, skim, dry and buttermilk.

Cheese: cottage, cream, cheddar types, natural or processed.

Ice Cream

#### Contribution to Diet

Milk is our leading source of calcium, which is needed for the development and maintenance of healthy bones and teeth. It also provides high-quality protein, riboflavin, Vitamin A and many other nutrients.

Amounts Recommended

Some milk every day for everyone. Recommended amounts listed below are in terms of whole fluid milk:

	<u>8 oz cups</u>
Children under 9	2 or 3
Children 9 to 12	3 or more
Teenagers	4 or more
Adults	2 or more
Pregnant women	3 or more
Nursing mothers	4 or more

Part of all milk consumed may be in any form. Cheese and ice cream may be used as a substitute for milk. The amount of either required to replace a given amount of milk is figured on the basis of calcium content. Common portions of various kinds of cheese and ice cream and their milk-equivalents in calcium are:

1-inch cube of cheddar-type cheese	=	$\frac{1}{2}$ cup milk
$\frac{1}{2}$ cup cottage cheese	=	$\frac{1}{3}$ cup milk
2 tablespoons cream cheese	=	1 tablespoon milk
$\frac{1}{2}$ cup ice cream	=	$\frac{1}{4}$ cup milk

Meat GroupFoods Included

Beef; veal; lamb; pork; variety meats such as liver, kidney, heart and prepared meats.

Poultry and eggs.

Fish and shellfish.

Alternates: dry beans, dry peas, lentils, nuts, peanuts, peanut butter.

Contribution to Diet

Foods in this group are valued for their protein which is needed for growth and repair of body tissues: muscles, organs,

blood, skin and hair. These foods also supply iron, thiamine, riboflavin and niacin.

Amounts Recommended

Choose two or more servings every day.

Count as a serving: 2 to 3 ounces of lean, cooked meat, poultry, or fish (bone weight should not be included); 2 eggs; 1 cup cooked dry beans, dry peas, or lentils.

Bread-Cereal Group

Foods Included

All breads and cereals that are whole grain, enriched, or restored (check labels to be sure).

Specifically, this group includes: breads, cooked cereals, ready-to-eat cereals, cornmeal, crackers, flour, grits, macaroni, spaghetti, noodles, rice, rolled oats, quick breads and other baked goods if made of whole grain or enriched flour. Parboiled rice and wheat may also be included in this group.

Contribution to Diet

Foods in this group provide protein, iron, several of the B vitamins and food energy.

Amounts Recommended

Choose four bread and one cereal servings or more daily. Or, if no cereals are chosen, have an extra serving of breads or baked goods, which will make a minimum of five servings from this group daily.

Count as one serving: 1 slice of bread; 1 ounce of ready-to-eat cereal; 1/2 to 3/4 cup of cooked cereal, cornmeal, grits, macaroni, noodles, rice, or spaghetti.

Other Foods

To round out meals and to satisfy the appetite everyone will use some food not specified: butter, margarine, other fats, oils, sugars, or enriched refined grain products. These are often ingredients in baked goods and mixed dishes. Fats, oils and sugars are also added to foods during preparation or at the table.

These "other foods" supply calories to the diet and must be included in the total nutrients in the diet.

**FOOD AND NUTRITION BOARD, NATIONAL RESEARCH COUNCIL  
RECOMMENDED DAILY DIETARY ALLOWANCES<sup>1</sup>, REVISED 1958**  
**DESIGNED FOR THE MAINTENANCE OF GOOD NUTRITION OF HEALTHY PERSONS IN THE U.S.A.**

(Allowances are intended for persons normally active in a temperate climate)

	Age-Years	Weight kg. (lb.)	Height cm. (in.)	Calories	Protein gm.	Calcium gm.	Iron mg.	Vitamin A I.U.	Thiam. mg.	Ribofl. mg.	Niacin <sup>2</sup> mg. equiv.	Asc. Acid mg.	Vitamin D I.U.
<b>Men .....</b>	25	70 (154)	175 (69)	3200 <sup>3</sup>	70	0.8	10	5000	1.6	1.8	21	75	
	45	70 (154)	175 (69)	3000	70	0.8	10	5000	1.3	1.8	20	75	
	65	70 (154)	175 (69)	2550	70	0.8	10	5000	1.3	1.8	18	75	
<b>Women ..</b>	25	58 (128)	163 (64)	2300	58	0.8	12	5000	1.2	1.5	17	70	
	45	58 (128)	163 (64)	2200	58	0.8	12	5000	1.1	1.5	17	70	
	65	58 (128)	163 (64)	1800	58	0.8	12	5000	1.0	1.5	17	70	
	Pregnant (second half)			+300	+20	1.5	15	6000	1.3	2.0	+3	100	400
<b>Infants<sup>4</sup> ..</b>	Lactating (850 ml. daily)			+1000	+40	2.0	15	8000	1.7	2.5	+2	150	400
	0-1/12 <sup>4</sup>				See Footnote								
	2/12-6/12	6 (13)	60 (24)	kg.x120	0.6	5	1500	0.4	0.5	6	30	400	
	7/12-12/12	9 (20)	70 (28)	kg.x100	4	0.8	7	1500	0.5	0.8	7	30	400
<b>Children .</b>	1 - 3	12 (27)	87 (34)	1300	40	1.0	7	2000	0.7	1.0	8	35	400
	4 - 6	18 (40)	109 (43)	1700	50	1.0	8	2500	0.9	1.3	11	50	400
	7 - 9	27 (60)	129 (51)	2100	60	1.0	10	3500	1.1	1.5	14	60	400
	10-12	36 (79)	144 (57)	2500	70	1.2	12	4500	1.3	1.8	17	75	400
<b>Boys.....</b>	13-15	49 (108)	163 (64)	3100	85	1.4	15	5000	1.6	2.1	21	90	400
	16-19	63 (139)	175 (69)	3600	100	1.4	15	5000	1.8	2.5	25	100	400
<b>Girls.....</b>	13-15	49 (108)	160 (63)	2600	80	1.3	15	5000	1.3	2.0	17	80	400
	16-19	54 (120)	162 (64)	2400	75	1.3	15	5000	1.2	1.9	16	80	400

<sup>1</sup> The allowance levels are intended to cover individual variations among most normal persons as they live in the United States under usual environmental stresses. The recommended allowances can be attained with a variety of common foods, providing other nutrients for which human requirements have been less well defined. See text for more detailed discussion of allowances and of nutrients not tabulated.

<sup>2</sup> Niacin equivalents include dietary sources of the preformed vitamin and the precursor, tryptophan. 60 milligrams tryptophan equals 1 milligram niacin.

<sup>3</sup> Calorie allowances apply to individuals usually engaged in moderate physical activity (page 2). For office workers or others in sedentary occupations they

are excessive. Adjustments must be made for variations in body size, age, physical activity, and environmental temperature.

<sup>4</sup> See text for discussion of infant allowances. The Board recognizes that human milk is the natural food for infants and feels that breast feeding is the best and desired procedure for meeting nutrient requirements in the first months of life. No allowances are stated for the first month of life. Breast feeding is particularly indicated during the first month when infants show handicaps in homeostasis due to different rates of maturation of digestive, excretory, and endocrine functions. Recommendations as listed pertain to nutrient intake as afforded by sow's milk formulas and supplementary foods given the infant whose breast feeding is terminated. Allowances are not given for protein during infancy.

### NUTRITIVE SOURCES

#### FOODS RICH IN IRON

- Dried Fruits
- Eggs
- Enriched Bread and Cereal
- Fish
- Green Leafy Vegetables
- Meat
- Poultry

#### FOODS RICH IN CALCIUM

- Green Vegetables
- Milk
- Milk Products
- Whole Grain Products

#### FOODS RICH IN VITAMIN A

- Animal Liver
- Fish Liver
- Milk Products

#### FOODS RICH IN VITAMIN B<sub>1</sub>

- Whole Grain Breads and Cereals

#### FOODS RICH IN VITAMIN C

- Citrus Fruits
- Raw Leafy Vegetables

#### FOODS RICH IN VITAMIN B<sub>2</sub> ORG

- Green Leafy Vegetables
- Milk
- Organ Meats

#### FOODS RICH IN NIACIN

- Enriched Whole Grain Products
- Fish
- Meat
- Poultry

#### FOODS RICH IN VITAMIN D

- Concentrates
- Fish Liver Oils
- Vitamin D Enriched Milk

WEIGHT, DIET AND EXERCISE

PART II

EXERCISE

PART IIPHYSICAL FITNESS

Physical fitness is just as important to a trim figure and good health as correct weight. If you are a normal healthy individual, proper exercise should be a part of your daily routine. Certainly every weight reduction diet should include a physical fitness program. This doesn't mean that you must be musclebound, but it does mean that you should have muscle tone, strength and endurance.

To achieve physical fitness, you must follow a regular program of exercises. Golf, swimming, skiing, walking and even gardening are excellent. But, to insure proper physical fitness, a program of scientifically designed exercises should be followed regularly in addition to your favorite sport or hobby. This should take no more than 10 to 15 minutes daily. Your daily exercises can be performed at any time. Some prefer to exercise in the morning before they shower; this is an invigorating way to start the day. Others who prefer to sleep until the last minute exercise during the middle of the day; an excellent way to break up the day and avoid that mid-day slump. Vigorous exercise in the evening when you are tired is not good and exercise immediately before retiring should be avoided.

There are many scientifically designed exercises; probably the most famous of these were published by the Royal Canadian Air Force and adopted by the U.S. Air Force. They are the SBX (Five Basic Exercises) for men and the XBX (Ten Basic Exercises) for women. Booklets are available at 35¢ per copy through Queens Printers, Ottawa, Canada.

BACK PROBLEMS

It is estimated that 50 percent of the adult population of the United States are overweight. It is also estimated that more than 50 percent of the population who are over 25 suffer from back problems in some form; and whether the cause is muscular or spinal, the result is crippling. Records indicate that next to the common cold, back ailments are the most frequent cause of absenteeism in industry.

To identify one of the most frequent causes of back trouble, medical science points out that the human chassis was not originally designed for upright walking. Nature responded to the evolution of man's upright posture by reshaping bones and joints, and strengthening muscle fibers to accommodate his new freedom of action. But, while nature strengthened man's midsection, the fact remains that approximately half of the body and weight is supported on the lumbar or lower section of the spine.

An injury to the bone structure, muscles or tendons supporting the lumbar area often results in recurring and painfully crippling back problems. An injury, however, is not a prerequisite to back trouble. As you grow older and are less active there is a tendency to neglect general muscle tone and strength and to become soft. The average individual has degenerated to this physical state by the time he is 25 and can expect recurring back problems.

Soft and weak stomach muscles which are not sharing the workload increase stress on the muscles supporting the lower back. Prolonged stress on these muscles causes muscular fatigue that often results in muscle cramps and spasms in the lower back. This condition is extremely

painful and will usually restrict the actions of the victim; at times, to a point of immobility. Rest and heat are the best therapy and will aid recovery.

Here, the cliche "An ounce of prevention..." is appropriate. So, to serve a dual role - that of aiding in physical fitness and as a series of exercises which are scientifically designed and useful to all - the Back Flexion Exercises are included.

If you are not a victim of back trouble, the Back Flexion Exercises may help you to avoid future back problems. If you have experienced back trouble, see your doctor, learn the cause of your back problem and follow your doctors orders. He may prescribe the Back Flexion Exercises.

#### BACK FLEXION EXERCISES

The following describes and illustrates the Back Flexion Exercises, which are recommended by the office of the Surgeon General, United States Air Force. Best results will be obtained by following these simple rules:

- o Start with a few and build up to 10 or more of each exercise daily.
- o Always move slowly--never jerk and never do an exercise or assume a position that hurts you.
- o Stretch.
- o Make these exercises a routine part of your daily life.

BACK FLEXION EXERCISES

1. PELVIC ROLL. Position - Lie on back with knees bent so that feet are flat on floor. Arms at side. Tighten abdominal muscles and tilt hips (pelvis) forward so that the back flattens against the floor.
2. LEG LIFT. Position - Lie on back with legs out straight. Bend one knee towards the chest, then extend leg towards ceiling and lower slowly to floor. Repeat with opposite leg.
3. KNEES TO CHEST. Position - Lie on back with legs straight. Pull both knees to chest, tighten knees to chest with both arms. Then raise head as if attempting to touch forehead to knees.
4. SIT-UPS. Position - Lie on back with knees bent so that feet are flat on floor. Arms either extended, across shoulder or behind neck (according to your tolerance). Roll head up first, then shoulders, then pull with abdominal muscles, completing the "sit-up." (DO NOT "JERK" TO THE SIT-UP POSITION)
5. HEAD LIFT. Position - Lie on back with knees bent so that feet are flat on floor, arms across chest and grasp upper part of opposite arm. Lift your head until your chin touches your chest and raise shoulders from the floor. At the same time flatten the lower back against the floor. Return to start position.
6. SITTING FLEXION. Position - Sit upright on the floor with knees straight, arms raised in front of you pointing finger tips at toes. Bend forward slowly attempting to touch the toes. Return to sit-up position.
7. HIP FLEXION. Position - Knee to chest; foot flat on floor (heel down); both hands flat on floor, arms straight; opposite leg straight

out. From this position raise hips as high as possible then lower hips. Repeat series with opposite knee bent and leg straight.

8. HEAD AND LEG LIFT. Position - Lie flat on back with hands clasped behind the head. Lift head until your chin touches your chest and raise shoulders from floor. At the same time lift legs and bend knees attempting to touch the knees with elbows.

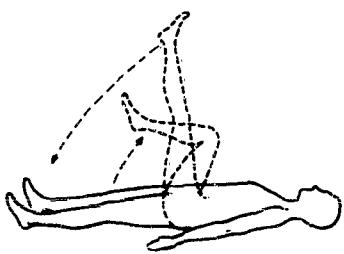
9. PELVIC TILT. From a sitting position with arms folded, elbows on knees and back bowed to eliminate the sway in the lower back, come to a standing position, chin on chest, arms folded and back straight (buttocks "tucked under"). Return to sitting position.

10. SQUAT AND BOUNCE. Position - Standing; chin on chest; arms straight, raised slightly and pointing at floor; pelvis tilted forward (buttocks "tucked under"); feet flat on floor with heels 12 to 15 inches apart. Squat, feet flat on the floor and bounce. Return to standing position.

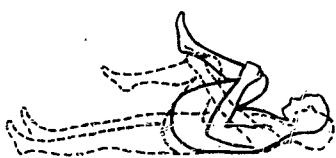
11. RESTING. Rest is the best therapy for a tired, painful back. A reclining position with the legs supported over a chair or ottoman will relieve pain by taking all pressure and weight from the back and legs. For complete relief this position should be maintained from 10 to 30 minutes.

**BACK FLEXION EXERCISES**

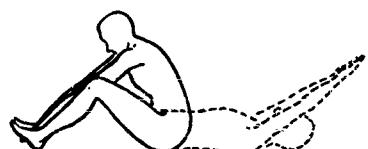
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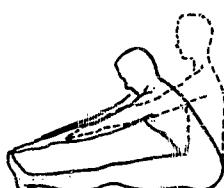
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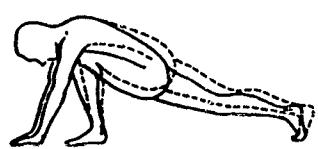
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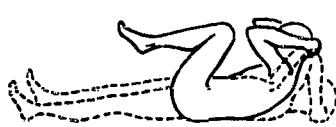
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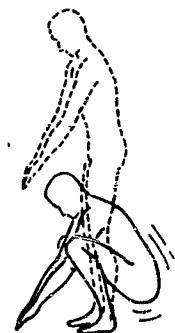
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DO IT RIGHT. Good posture and proper use of the muscles and joints are essential to a healthy and normal back. This section is included so that correct posture may become a functional part of your life, 24-hours a day. Here are a list of "do's" and "don'ts" illustrating the "right" and "wrong" of posture and proper care of your back.

Do

1. Try to eliminate the "sway" or "hollow" from your lower back. Do this by holding the chest up and forward and elevating the forward part of the pelvis. Flattening your back against a wall will aid in learning this position.
2. Sit with the buttocks tucked under so that the "sway" in the lower back is eliminated.
3. Sit with the knees bent, and when possible, higher than the hips. This rule applies when driving an automobile (seat forward).
4. Squat instead of bending at the waist.
5. Bend your knees when bending forward.
6. Lift with your legs and arms, not your back.
7. Sleep on a firm bed.
8. Sleep with your knees bent, whether on your back or side.
9. Try to be comfortable at all times.

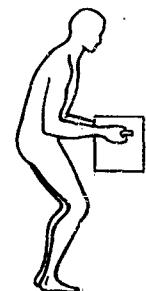
Don't

1. Bend backwards.
2. Arch the lower back or slouch allowing the shoulders and stomach to sag and the lower back to arch.
3. Lift loads in front of you above the waist or lift with the back.
4. Bend forward with knees straight.
5. Sleep on a soft bed.

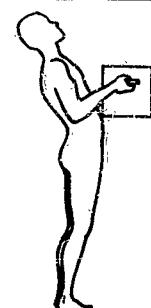
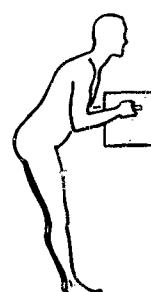
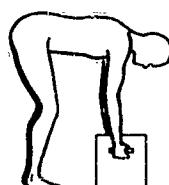
6. Sleep on your back unless your knees are propped up.
7. Slump when sitting, placing a strain on the lower back.

## DO IT RIGHT

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**RIGHT**

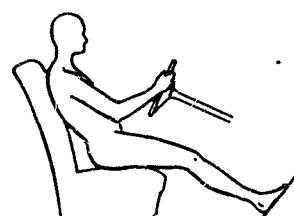
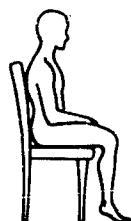
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**WRONG**

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**RIGHT**

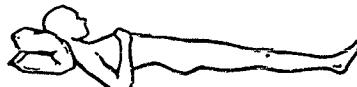
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**WRONG**

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**RIGHT**

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**WRONG**

Therapeutic